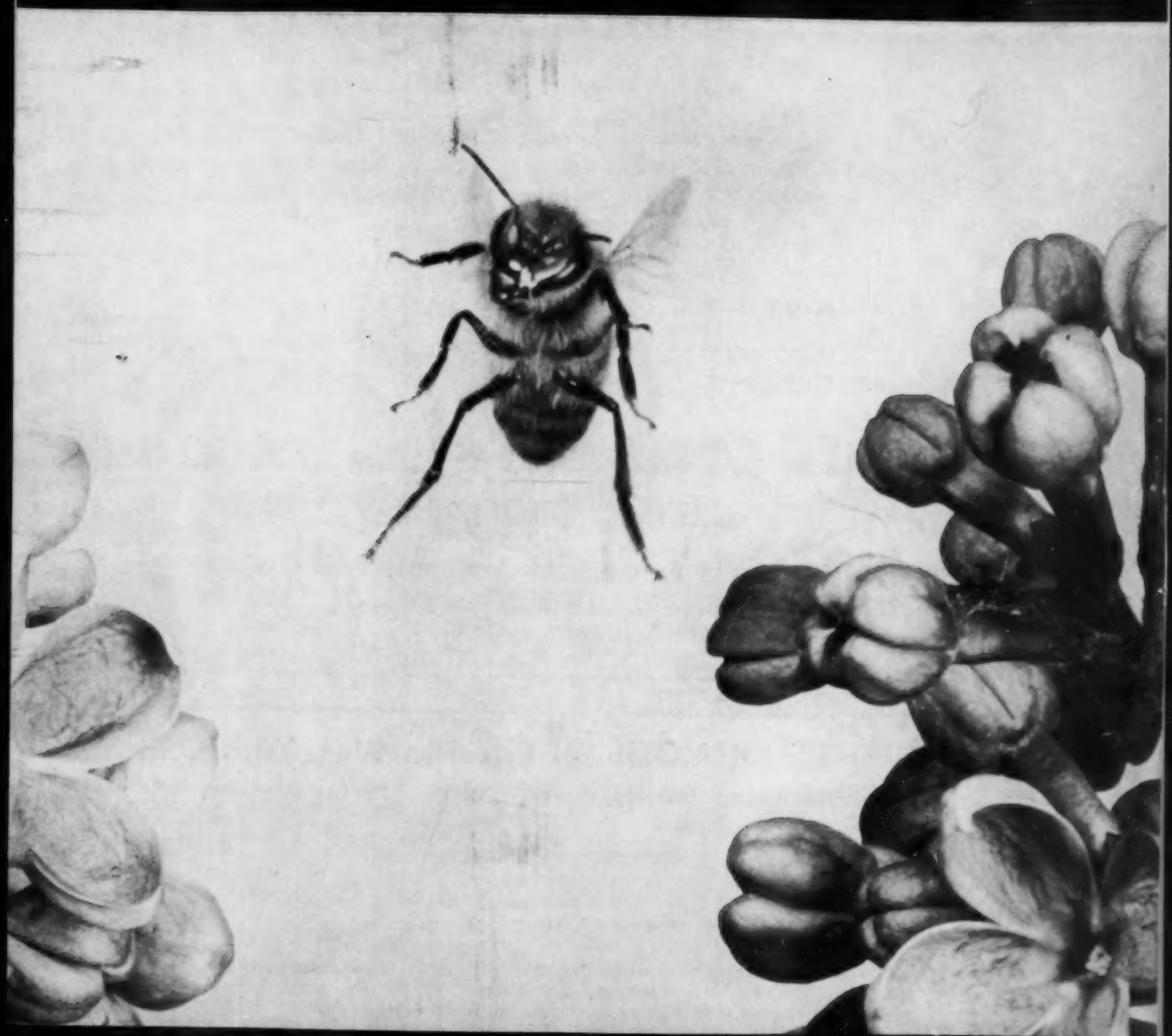

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The American Bee Journal Hamilton, Illinois

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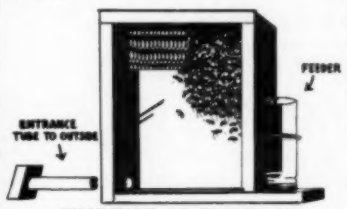

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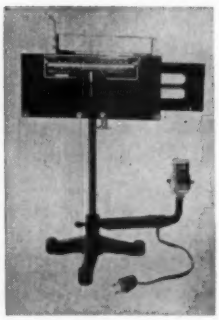

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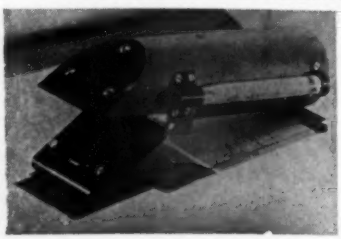

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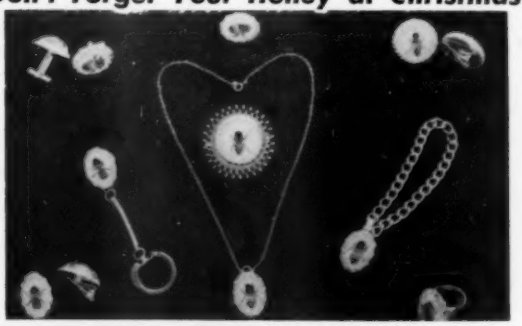

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Al Jones

The Sideline Producer

EDITOR, AYLMER (Al) J. JONES
34 Chandler Road
Malden, Mass.

My Bees Sell My Crop

by CURTIS WIGHTMAN

Every time my bees need attention it seems that I am busy producing crops for our family operated roadside market. Our main crops of strawberries, sweet corn, peaches, apples and pumpkins always need attention at the same time my bees do. I do try to take care of them by a sort of "scientific neglect" because they are the best salesmen I have on the place.

My apiary is located right in back of the road stand, and you'd be surprised how many people see these colonies and decide to try a jar of honey. I have positioned the honey stand so that the apiary is easily seen from it and both the apiary and the amply stocked honey display help condition the new customers and remind the steady customers that they ought to replenish their supply.

My system of beekeeping which I have labeled "scientific neglect" is simply an early inspection before either roadside market or farm is busy in early March. Colonies are checked for disease, amount of brood, and reserve of stores. Anything not quite up to snuff is united, or marked to be requeened later. Supers, and I use all standard ten frame bodies, are piled on when I see the first dandelion bloom about April first in this locality.

At this time I use four standard supers on each of the two story colonies. My apple trees are beginning to bloom also at this time and my "salesmen" have to do some pollination work. They seem to be willing, at least they continue doing pollination work during the rest of the season.

Later on in the summer a local queen breeder comes in and the two of us check the ones that I had marked earlier, and requeen these or any others that we feel may need it. We also make two or three new colonies by stealing a little brood from one or two colonies, placing this on the stand of an extremely powerful one that can stand relocating, a system I learned reading A. B. J. At this time we also add any extra supers that we hope the colonies will need as the tulip poplar flow is about to begin.

Our main honey crop comes from tulip poplar, some sumac, and, of course, a little clover and alfalfa if the bees have a chance to gather it before the farmers start their hay making. Some years we have a copious flow from Queen Anne's Lace, or wild carrot, as it is known in our area. We have several minor flows, such as dandelion and mustard, to get the bees in fine shape for the main flow.

In the past few years we have been fortunate in getting enough honey to winter our colonies from aster and goldenrod. This is fortunate since I have decided to winter in three standard bodies, leaving over a hundred pounds per colony. Yes, I know this is unorthodox as far as most Jersey beekeepers are concerned, but I find it pays in less winter loss and not having to feed in early spring when I am busy with other matters. This system also results in larger colonies in the spring to give me more efficient pollination, because I do expect these salesmen to do some other chores.

These bumper colonies do produce more honey in the spring, and even if I have to cut some of them into extra colonies, I appreciate large colonies and the crops they will produce. Late in the fall I confine the bees to the three stories I intend to

The author in his apiary.

Wightman's farm stand where the honey is sold.

winter in, see that lots of pollen is in the lower story and the two uppers are chock full of honey.

I find each year that my customers insist upon my extracting earlier, so they can have "fresh honey" and though my trade is now large enough that I have to buy some honey, a good many customers know the flavor of the local honey and insist upon it even after having all been sold out of my product by my super salesmen, the bees in my close-by apiary.

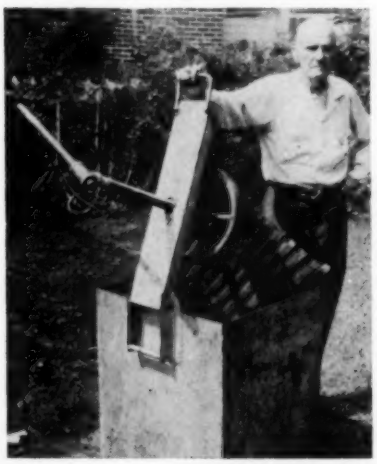
Morristown
New Jersey

Larger view of the farm stand.

Wax Production in the Southeast

by BRUCE ANDERSON

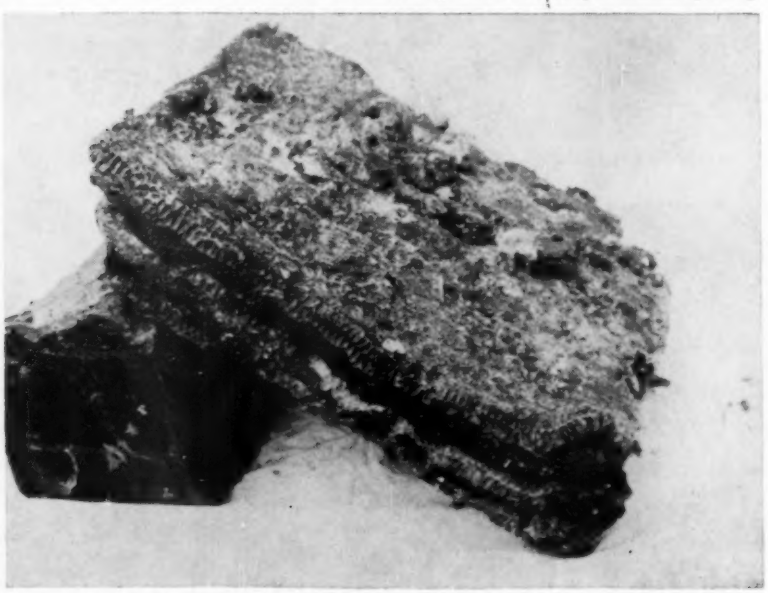
Several years ago M. G. Dadant stated in the American Bee Journal that he would like to try out the production of wax on a commercial scale along with honey. With a sagging market for bakery honey in 1960 and the advent of a portable wax extractor Mr. Dadant's suggestion bore fruit being helped along when I purchased 40 colonies mostly in homemade bodies. Although manufactured frames and wired foundation had been used by these bees, one half of them had crossed combs or 30% drone combs, in the brood nest. A serious weakness of foundation showed up under average let-alone care of swarms. They may have been weak or followed by a dearth of honey with gnawing away of the wax from the wires. Of course, after the worker base was destroyed and the colony had become strong enough to build out these combs, drone cells resulted. I find that the more wire used the worse this problem becomes. When a beekeeper is careful to have new combs drawn by strong colonies in a good honeyflow and then only in an upper story, all we need is to secure combs attached to the bottom bar.



This outfit produces good wax from old combs, from 30 to 60 pounds each pressing.

Transferring these bees to 10 frame hives with good combs was a major operation, in which 1 to 3 pieces of worker brood were tied into empty frames, thus leaving a mass of broken combs much of it over 25 years old, and filled with pollen and brood. With the use of steam, the wax press did a fine job of extraction.

With the production of chunk comb honey in the Southeast, the elimina-



Old combs pressed into shape, ready for the wax press.

Cake of old combs and cappings, with pollen, melted and poured into a paper box. It keeps indefinitely, safe from moth and ready for the press.

tion of drones, a luxury in which many beekeepers indulge, becomes a most important problem. Unless the excluders are placed under the comb honey supers by March 1st in Virginia, a good queen will search out the drone combs quickly. Possibly she has already done so. Then we are prone to move brood combs with 5% to 10% drone cells to one side of the hive rather than put them into wax where they should go. Replacing the drone with worker combs in these wired frames can be made worthwhile but it is a thankless task.

Wax making with us takes on importance by the almost certainty of a honey-dew flow from pine trees, which usually coincides with that of the tulip-tree or poplar, both being dark colored. For this flow I place 4 empty super frames from which chunk honey has been cut leaving ⅛ in. of comb attached to the top bar, between 5 drawn combs in a 10 frame super.

Another year a mistake will be corrected, for most of the drawn combs had been darkened by brood some of which were used in drawing the comb in the empty frames. In this connection an interesting fact was noted; before these supers could be removed for the later flows when clovers and sourwood came on, the bees placed the sourwood largely in the new combs while placing other honeys in the old combs beside them at the same time.

Keeping drone combs out of shallow supers used as food chambers becomes very important when they are placed under the single standard body before the light colored honey is stored. This manipulation throws more of the light honeys into the chunk honey supers than does the double 10 frame hives, of which only about 40% of the queens are good enough to force the table honeys into the supers above, unless they are Demareed.

I like to use 2 body hives for apple pollination even though they require more labor, since they can field 3 times the minimum force of 1 body and 6 combs of brood. The labor problem is aided by the use of a low bed tractor trailer so that two men can load them from the ground.

The investment of $100 in a wax press looms large to the 100 to 200 colony beeman, but it now appears that an annual wax production of 200 to 300 pounds per year can be made; a sizable income to the present beeman. With mounting freight costs the shipments of slumgum becomes prohibitive, thus tempting one to hold defective combs which means enough drones to reduce the crop from 10% to 20% per hive.

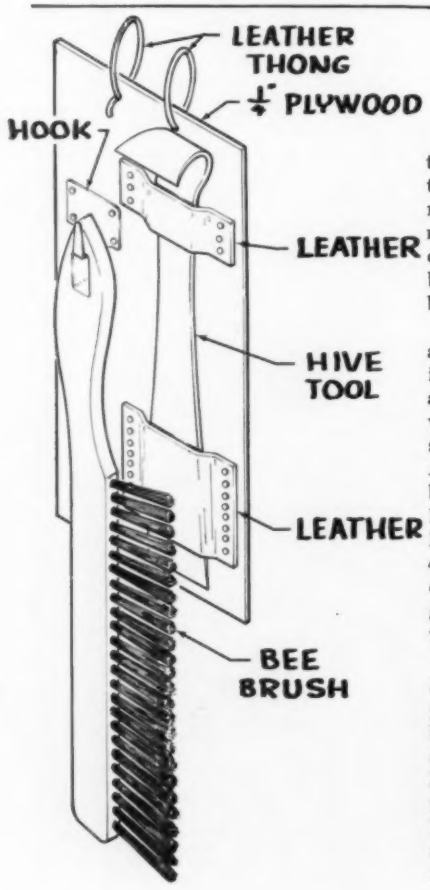
The initial cost of a wax press could be shared by two or more beemen, by a local association, or one owner could work wax for a fee. I find it expedient to protect small amounts of old combs from the moth by melting them into a solid cake, which may be kept for a suitable rendering time and place. With less than 50 colonies in Florida this processing becomes necessary where the moth is a continual hazard.

The question arises at once; will such commercial wax making materially reduce the honey crop? I cannot say. In the first place you will notice that work can be done when low grade honeys are coming in. Then you may be as I, allergic to selling honey, much preferring others take over that part of beekeeping.

Boones Mill
Virginia

The Handy Holster

by LEW W. WHITE



Someone has said that the hive tool is the most placed and misplaced, the most reached for when out of reach, the most lost and found, the most used and abused and the most dropped in the dirt of any tool the beekeeper uses, and that the bee brush is next in line.

This scribe has experimented with a lot of means and methods for keeping the hive tool and the bee brush always within easy reach while working the bees. The Handy Holster, shown in the drawing fills the bill. A good many designs of the same basic idea have been tried but this, I think, is the most efficient thing I have seen or tried. It is simple and easy to make and use and is not difficult to keep clean. When once you get used to it, you won't feel ready to work your bees without it.

The Handy Holster consists of a 5 x 11 inch piece of ¼ inch thick plyboard with two pieces of harness leather nailed on to it so as to form an open receptacle into which the hive tool can be easily inserted and removed; also a hook onto which the bee brush may hang. A strong leather string is laced into the top so as to form two loops through which to slip your belt so that the thing will hang neatly at your side.

The hook is made from a 1/16 inch thick piece of sheet metal 1½ x 3 inches with corners cut away so as to leave a 1½ x 1¼ base and a center tongue about ¼ inch wide with which to form the hook.

By using this gadget you can have your hive tool and bee brush always within easy reach while working your bees. Drawing shows 8 inch hive tool, and bee brush in place. The rig should be covered with a good grade of shellac or spar varnish before being put into use.

Shawnee
Oklahoma

Worry

Worrying is like sitting in a rocking chair. It keeps you busy but you don't get anywhere.

Your Wife's Opinion

Never try to change your wife's opinion, especially when you don't know what it is.

Clare D. Floyd

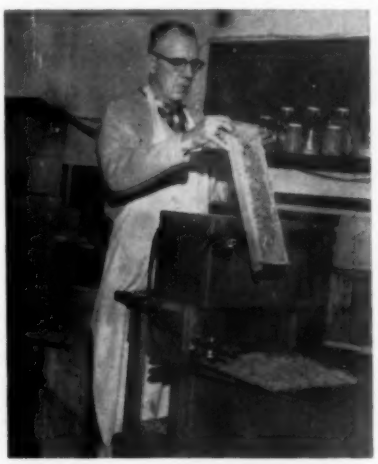
Custom Extracting

by B. W. RICHARDSON

Custom extracting sort of becomes automatic. It comes to you naturally as a beekeeper, even though you are just beginning. Someone is always up against it for time or lack of equipment to do the job himself. Now the point is do you want it or not? I think it is a good idea. It has worked out that way for me.

Custom extracting is one way to get some return on the investment in your equipment. It enables you to buy a more expensive extractor, uncapper and wax capping melter. In the long run it is better to buy equipment big enough and efficient enough to make your own extracting faster and easier. With the money returned to you from custom extracting your investment will be paid for sooner. Like most beginners, one buys the smallest and least expensive machinery which is slow work if any amount of work is brought in. The price charged for extracting honey must be kept low. The beekeeper you do business for has to sell his honey at a profit and you cannot use up all his profit. Therefore I charge five cents a pound for honey obtained.

Now there are lots of ifs as to how much honey can be extracted from a super. Granulated honey in combs and pollen accounts for the loss of honey obtained, particularly if combs are old. It is foolish to try to uncap crystallized combs. The only way I know of is to melt down the whole business in a capping melter and not have the heat hotter than one hundred and fifty-five. Preferably the honey should run off to a cooler container. This honey although thicker is good eating. I use a radial extractor, steam uncapping knife and baskets which catch the cappings that drip into a double bottomed drainer. The bottom of this drainer is inclined so that the honey flows forward to a honey gate. The exhaust from my mechanical knife is piped into the space between the bottoms thus creating heat to cause the honey to drip out of the cappings faster. After draining twenty-four hours, the wax cappings are placed in a Wax Master capping melter. The wax and honey are separated here and allowed to cool. The honey from the extractor and uncapping tank is strained into a tank heater through two nylon stockings, nurses weight, white, one inside the other. I should caution you to not cut off the toes to make proper length. The stockings will run. Tie a knot to the proper length and turn inside out. Tack to a wooden frame to rest on the top of tank. This should last you a season.



Richardson uncapping honey combs.

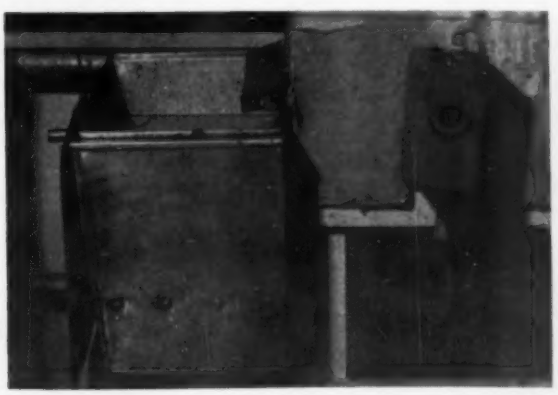
It's a lot of work for three dollars for a sixty pound can of honey. However I believe it is pretty good pay when you count the wax received and the honey returned from the capping melter. In any case my equipment is nearly paid for and I am ready to start on the problem of rendering old combs. Too much wax is lost by the back lotter through the improper handling of old combs and a simple machine must be perfected to do this.

I have had three extractors in the comparatively short time that I have been at it. Each one has been larger and more efficient than the last. There was no trouble in selling the extractors at a fair price since they had earned their way in the first place. If the customer wants the honey processed and bottled then it is five cents more to wash and fill.

It is surprising how many beekeepers will part with ten cents a pound. Most sell at fifty cents a pound or better. The public thinks the hobbyist's honey is better and it never stays around long.

Now I should caution you about several pitfalls. First, there is the problems of disease. I usually have seen the colonies of my friends and know they are clear of it. This is the best way. I am pretty well posted on the trouble spots. The extractor should be cleaned with steam or boiling water between any job that might be doubtful. Wax particles on the extractor should be eliminated. Another thing, be sure that your extracting plant is dust free. In bottling be sure the jars are sterilized and after sterilizing do not put the jars

Filling containers. (Photo by Thomas McLain, Jr.)



Heating and melting equipment. (McLain photo.)

back in the case top down, as there is always a paperbox fuzz in the bottom of these cases caused by the jars riding in them. You will get fuzz in your honey if you do.

Inspect the honey coming into your plant in front of your customer, so he will know what grade of honey to expect back. Actually it will look lighter than it really is and so inform him. It is rarely that a customer expects more than you have extracted. In the beginning you might wonder how you are going to come out. When cappings are drained and everything is in one container or containers it's usually more than he thinks. In any case give him every last bit since you get paid that way. If you do for your customer as you would do for yourself you will satisfy him.

Worcester
Massachusetts

Photo of B. W. Richardson taken by Jack Wollner.

Beekeepers Can Help The Schools

by PETER BREM

By helping the schools, beekeepers can also help themselves. This fact was brought home to me most effectively this last fall when one of my teachers - I happen to be an elementary school principal - asked if I would let her class of second graders visit our beehives.

Beekeeping is only a hobby with me. As a matter of fact, I gave it up prior to going into service during the last war, but since, several years, my oldest boy has somehow drifted into beekeeping in a small way and I serve in the capacity of a senior consultant only. The saying might hold true - once a beekeeper, always a beekeeper!

The teacher and I agreed on a date and time and we arranged for transportation. Appropriate letters were written to the parents and the usual excitement prevailed preliminary to and in anticipation of the trip.

I, for my part, felt confident that the experience would be very unique and valuable to the children. Few children in big cities, even small cities, ever have the opportunities to get first-hand experiences related to honey production. It is, and remains, a mystery for most.

For my part of the preparation I cleaned out the two-car garage. There I set up a long table on which were displayed various items such as tools, smoker, bee hat, empty frames, comb foundation, etc. Prominently displayed in the middle of the floor was the simple 2 - frame extractor which my son uses. He, incidentally, is now a senior in high school and the beekeeping project has been a very worthwhile educational venture for him.

I might mention that preliminary to the children's visit, various definite and indefinite inquiries were made as to the possibility of buying honey. I had no thought of making a commercial project out of this, but I was mindful of the fact that the youngsters should be given the opportunity to purchase small token samples of honey. Therefore, I had my son prepare about thirty small jars of honey at 25 cents per jar. A big operator could probably have donated these to the cause, but I did not want to ask my boy to make the financial sacrifice. His honey money is part of his spending money. Anyway, the little jars became part of the display. Everything was in readiness.

The visit was a big success. After the youngsters piled out of the school bus I assembled them in the garage and explained to them the basic procedures of how the bees live and work in a hive and how, finally, the honey was removed and taken out of the comb. Following that I led the group to the orchard and stationed the children a safe distance from the hives. There was more talk and more questioning. As a climax, I played the part of a beekeeper and actually opened one hive to inspect a few frames of bees. Any number of boys would gladly have assisted me with the smoker, but there I drew the line. There was no point in taking any chances. The first thing every youngster would have told at home was, that so and so got stung. It pays to be prudent!

Before it was time to leave we had a surprise for the children. My wife had specially prepared a batch of honey cookies and now they were served with milk. The school lunch department had sent a case of half pint cartons of milk along on the bus.

Now questions began to pop about buying honey. They wanted to take some home. Their hands started to dig for the money they had brought along and I got the surprise of my life. Some mothers had given them enough money for several pounds of honey. Some had several dollar bills. I wasn't prepared for that, but I did manage to see to it that everyone could, at least, buy a small jar.

Should there be a lesson in this for beekeepers? I think so. Future markets for honey depend on developing a taste for honey. The limited use of honey by the public is largely due to the fact that the use of honey is handed down from parents to children or it is a tradition in the family. Most people never buy it, because they have never tried it. By making their experience available to the neighborhood school, beekeepers can render a real teaching service and they can also do themselves some real good. Why not give it a try!

Waukesha
Wisconsin

The Historic Northeast

EDITORS

E. J. DYCE ROGER A. MORSE

Cornell University

Commercial Beekeeping in Maryland

HAROLD L. KELLY

When is a beekeeper a commercial beekeeper? That is the question; the subject is sometimes debated. Some have claimed that anyone producing honey for sale is a commercial beekeeper. If this is true, then many two and three colony backlot beekeepers are commercial, as often they produce more than the family needs and sell the surplus. It would seem that the commercial beekeeper is one who produces honey in sufficient quantity to make a reasonable contribution to his income, and definitely the beekeeper who devotes his time to honey production for his livelihood. The number of colonies of bees or amount of investment would not be too much of a factor in classifying the commercial beekeeper. While there are a number of large operators in the East and Northeast, the greatest number of commercial beekeepers in that region probably are in the 50 to 150 colony class.

To be a successful beekeeper regardless of the number of colonies operated, one must have a good fundamental knowledge of bees, their behavior and habits and a good knowledge of flora and weather conditions in the area in which he intends to operate. This knowledge is not gained quickly. It comes mostly by experience, often beginning in the back lot apiary, advancing to a side line operation, and, if the enthusiasm lasts, to a commercial operation involving outapiaries, orchard rentals and possibly a migratory operation. A successful organization requires a test of time.

Migratory operations are only for the strong with power of endurance. Long hours, loss of sleep, moving bees under the most trying conditions are usually encountered. But it pays off by getting the bees from an area where a honeyflow has ended into an area where another is about to begin. Sometimes the move is justified if only to get the bees into an area that will give them winter stores or an early spring build-up. Sometimes it is necessary to migrate bees temporarily to get them away from routine spray poisoning. In one of the best producing areas of Maryland, when the spring honeyflow is over, there is a dearth of nectar from early July until the following spring. No fall honeyflow.

To remain in commercial beekeeping, one must have an unfailing love for the bees themselves. There are many discouraging obstacles such as crop failures and disease which the beekeeper must combat and overcome to be successful. Without the necessary zeal, he will let down and soon be out of business. There is nothing that will deteriorate faster and become utter ruin quicker than neglected apiaries.

The geography of Maryland is similar to several of the eastern seaboard states. Because of its elevation from near sea level of the Coastal Plain, the Piedmont Plateau and still higher in the highlands to the west, there is a great diversity of blooming dates of the same honey plants. For instance, locust on the Coastal Plain will blossom one month before blossoms appear in the highlands of extreme western Maryland. The same

Two loads of bees on the way to new pastures. (Photo from Lloyd B. Shearman, Glenarm, Maryland.)

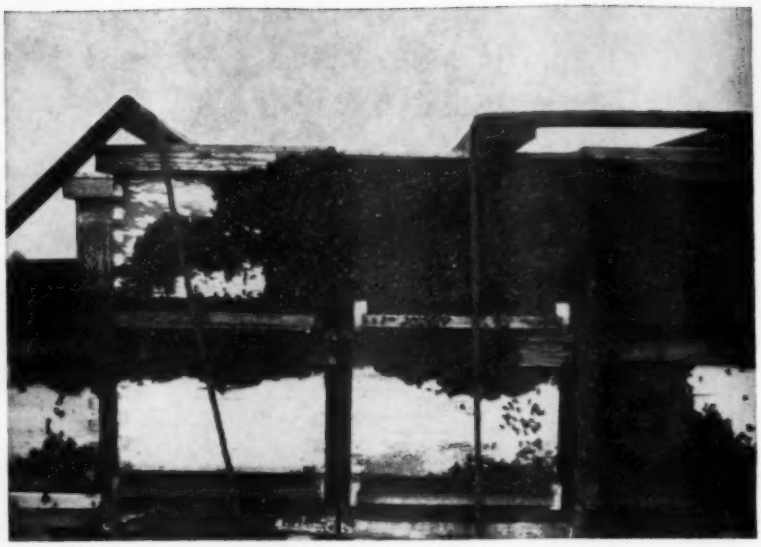
applies to other plants. Migratory beekeepers of Maryland who place their bees in the Cumberland Valley (the northern end of Shenandoah Valley) for clover after coming from the orchards, later move either to the eastern shore (that area between Chesapeake Bay and the ocean) for lima bean, or, go to the mountains to the west for sumac, basswood and buckwheat. Some cross state lines to mountain areas to the south for that ever popular sourwood honey.

Like many commercial operators in the North, a few Marylanders have found it advantageous to maintain locations in the deep South for honey from citrus as well as a source of supply of package bees for replacing winter losses and for building up weak colonies. Besides the many varieties of desirable honey flavors produced commercially in Maryland, orange blossom honey will also be found on the market with Maryland labels.

Management of commercial apiaries will necessarily differ, depending upon whether stationary or migratory apiaries are operated. The stationary operator can operate with two or three story brood chambers, manipulate for very strong colonies at an early date. Such hives and management are not suitable for migratory operation.

The migratory operator usually confines his operation to either the one story brood chamber or perhaps the one and one-half story brood chamber. He must not have brood nests too strong at the time of moving to the orchards or he will have a serious swarming problem before he gets out of the orchards. Beehives scattered over large orchards and stapled do not present an easy problem of swarm control. Swarm control measures are taken immediately after the bees are moved from the orchards to clover locations. Here a second brood chamber is added to relieve any pressure in the brood chamber caused from a possible good flow from fruit bloom and dandelion. This second brood chamber temporarily forestalls swarming and allows further expansion of the brood nest for the clover flow a few weeks later.

After the clover flow brood chambers are again reduced for the next move, east for lima bean or to the mountains for buckwheat or sourwood. As a rule, by this time the swarming fever is over and no longer a serious problem. The bees can be placed on their second location, supered, and left with only casual brood chamber inspection.



Moving bees in mid-summer, at night, without screening. It can produce a hot time for all.

In moving bees the most trying conditions are often encountered. Here a load is unloaded on the road after a breakdown. (Photo from Lloyd Shearman.)

Unless the migratory beekeeper has sufficient organization to immediately extract the clover crop, he may find it necessary to have two sets of supers, one for the clover flow and another set to put on the bees as soon as they are placed on their second location. This involves considerable additional investment.

Commercial beekeeping can be interesting and profitable, but unless one has the required enthusiasm and stamina, he had better stay a backlotter, sideliner or at least operate stationary apiaries. Moving apiaries in mid-summer, at night, without screening can produce a hot time for all.

Silver Springs
Maryland

Beekeeping in Connecticut History

PART I

by PHILEMON J. HEWITT, JR.

The beekeeper in the State of Connecticut can take pride in its beekeeping heritage. This heritage goes back to nearly as early as any other state since America was first settled.

The first records in which bees are definitely specified, are in the Connecticut Probate Records, starting in the year 1636. The spelling of words in the following material was copied as found in the reference as a matter of interest to the reader:

The will and testaments, Inventory of Goods of Ephriam Huit, deceased of Wyndsor, Connecticut, October 9, 1644—3 stockes of bees, 3 L (pound).

Estate of Thomas Nowell, Wyndsor, Connecticut, February 22, 1648, 4 stocks of bees, 3.00.00.

Thomas Dewys Estate, May 19, 1648, 2 stocks of bees, 2.10.00.

Timothy Standly, Hartford, Connecticut, deceased, October 16, 1648, 2 hivefses of bees, 1.10.00.

John Wilcock, October 1, 1951, 1 heive of bees given to his wife, all my fowles, all my sugar, honye, spice and siluer, and wamppeage (wampum).

Inventory of Jonathan Boardman deceased, September 21, 1712, 4 hives bees, 40s.

Inventory of Isaac Boardman, Wethersfield, Connecticut, 1719, 2 stocks of bees.

Ephriam Huit and Henry Smith were ministers who were among the first settlers at Windsor and Wethersfield, Connecticut. The others were men of families that settled at Hartford, Windsor, and Wethersfield.

Bees at this period of American settlement were highly prized possessions as indicated by the inventories of wills. One reference says honey was known in Wethersfield as early as 1648 and it refers to an inventory of "eleven skipps of bees which were valued at nine pounds."

Beekeepers were found among all sorts of people living in the early colonies. From a recently published book about Connecticut towns, we find that in Essex, Connecticut, Mr. Robert Lay built his house and home in 1730. He called it the "The Beehive." Mr. Lay was a prosperous and wealthy West Indies trade merchant. From the diary of Joshua Hempstead, New London, Connecticut, there is an entry in which it is mentioned that he made a beehive May 12, 1725, from some boards. He later says he purchased some cake-wax and some liquid honey which he later sold in trade. Mr. Hempstead traded in goods sent by ships sailing to the West Indies. He was also a farmer who planted clover seed for stock forage and hay. He planted clover over the many years that he farmed his farmstead. Mr. Hempstead's love for his home and farm was so great that he called it the "Old Hive."

Supplies of honey were obtained from hives and from bee trees in the woods which blanketed New England. One interesting bee tree story that happened in Connecticut was about a negro slave in the family of Daniel Shelton, of Trumbull, Connecticut in 1686. He found a bee tree by the use of a keen eyesight which followed the individual bee flying to her hive in a hollow tree. The finding of a bee tree was an exciting adventure because of its location, the cutting of the tree, and the gathering of the possible spoils of honey and wax comb.

The early beekeeping literature in Connecticut was mostly of European origin. Connecticut can however, count among the American authors, Mr. Thaddeus B. Miner, Woodbury, who published in Litchfield, in 1804, a small treatise on honey bees. This was the second book or treatise on honey bees to be published in America. Mr. Miner later published another edition which was a great improvement over the first by showing a greater understanding of bees in general. Another little known author who lived in Connecticut was William Hall who lived in Wallingford. He published his forty-eight page treatise on beekeeping in 1841. Mr. Hall was very active during his life-time, in promoting the practice of keeping bees. He sold many copies of his treatise priced at 12½c each. He also sold many beehives and exhibited comb honey and beeswax at local county fairs.

Soon after Connecticut was settled honey and beeswax became items of trade in world commerce. The honey from hives of bees and that from bee trees was consumed mostly at home as a sweet and in cooking and brewing or fermenting metheglin. Surplus honey above the home needs was used as a barter item in trade for other goods. Beeswax was extensively used in candles for light, as an ingredient in medicinal preparations, and in artistic creations. These creations were wall pictures made of wax and paper, sconces for candles, and for wax models kept under bell-glass and other household uses. Beeswax was also exported as candles and as cakewax.

The extensive shipping trade of Connecticut from coves and harbors of the state, embraced the business of carrying beeswax and honey between ports and into world markets. Several of these ports were Middletown, Norwich, and New London. The West Indies trade and market was a favored trade channel for beeswax and honey as was the English ports of trade. After the repeal of the duty tax on beeswax by England in 1816, the accrued tax for refund to Connecticut, amounted to $2,966.31½.

Beekeeping in Connecticut suffered a drastic and perilous set-back which started in the year 1805 with the appearance of the wax moth (Gallerria Mellonella). This moth destroyed the combs of many hives of bees and whole apiaries by its apparent wildfire spread throughout the state after its entry into Connecticut.

Beekeepers were greatly discouraged by the insect about which little was known. The moth's life cycle and the necessary conditions for its propagation were not very well perceived at that time. Many beekeepers pondered and speculated on how to be rid of this moth. They proposed many schemes for its destruction.

Beginning sometime around 1836, approximately, a revival of beekeeping interest was started by the publishing of beekeeping material in many weekly newspapers within the state.

Some of the agricultural newspapers read in Connecticut were out-of-state publications. These were the Boston Cultivator, Boston; the New England Farmer, Boston; The Cultivator, Albany, N.Y. Several of Connecticut's own rural farm publica-

tions were: Connecticut Farmers Gazette; Farmers Gazette and Horticultural Journal, New Haven.

In these farm publications articles on bees and beekeeping by John M. Weeks of Vermont, were published profusely. He was born in Litchfield Connecticut, May 22, 1788, though most of his lifetime was lived in Vermont. In 1836, his hive was the first hive to be patented.

Connecticut had several other publications which advocated the profession of beekeeping. They were agricultural almanacs, various newspapers and encyclopedias. The compiled statistics for the year 1840, said Connecticut produced three thousand eight hundred ninety pounds of beeswax.

Interest in beekeeping was further boosted by the local agricultural county fairs which sponsored the showing of comb honey and liquid honey. Some of these fairs were held at Litchfield, Fairfield, New Haven, and Hartford, Connecticut. These early Agricultural societies required that the exhibitors who put goods into the shows for competition and for awards, had to submit a paper on how the beekeeper managed his bees. The societies offered silver medals and cash money prizes for exhibiting 6 wooden beehives, honey in the comb (chunk), and liquid (strained) honey. The minimum weight for a specimen of honey was usually not less than five pounds.

In some literature about bees, published here in Connecticut, we have the story of the bear that caused trouble in the town of Bethany, April 8, 1776.

This bear was a hungry and audacious creature. He boldly got into a milk room where he drank several pans of cream. The farmer was disturbed by the noise and he went to investigate. This same bear had killed a calf and several sheep and a hive of bees at a neighboring farm. After escaping from the milk room he was pursued by the farmer and his brother. The next morning the bear was finally killed by a bullet. The skinned carcass was cut in two parts and one part was sent to New Haven as a curiosity. This would indicate that bears were already rare occurrences at that time.

Another literary story published as a part of a book for children in New Haven, Connecticut 1819 was called the Farm Yard Journal, by Aikin. This story was about a swarm that was loose. A description is given on how it was caught and the pandemonium of the entailed proceedings.

Litchfield
Conn.

Commercial Beekeeping in Maryland and Delaware

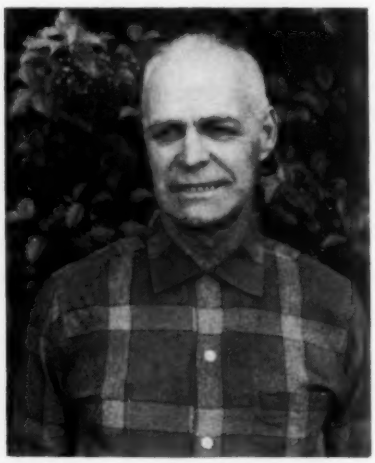
by LLOYD B. SHEARMAN

Beekeeping in Maryland and Delaware is not as easy as in some states where large crops of honey are obtained on fixed locations. We do not believe there is one locality in Maryland, or Delaware, where it would be entirely practical to attempt commercial beekeeping. The area is relatively small. It does, however, extend 300 miles, or slightly more, from its extreme western end to the Atlantic Coast on the east.

The above described region is favored with four distinct honeyflows from various floral sources. It is difficult to obtain honey from any single floral source, except from that section known as the Eastern Shore, which lies east of the Chesapeake Bay.

Since we live on the western shore of the Chesapeake Bay, we will begin with that area. During the winter months or early spring, we move all of our bees into an area within a fifteen mile radius of our home. As soon as the weather permits, all of the hives are inspected and made ready to go into the orchards for pollination. Our pollination work is done principally in cherries and apples, some in peaches.

When the bees are removed from the orchards, they are placed in outyards, of approximately fifty colonies each, on production locations. A number of yards are placed in our local region, where we have an abundance of tulip trees (tulip poplar) and black



locust, which begin blooming about May 10th. These two honey plants furnish the predominant portion of the honeyflow, with some help from blackberry and clover.

Moving westward, toward the mountains in the central part of the state of Maryland, we have another distinct section. It is a limestone area in which various clovers flourish, and in most seasons, yield a reasonable supply of nectar. Most of our bees are moved directly from the orchards into this area. Very little surplus honey is stored before June 1st to the 5th, although in some seasons, the black locust in this region is a help prior to the clover flow. As the clover flow diminishes, blueweed (Vipers Bugloss) picks up and extends the honeyflow until July 10th to the 15th. Blueweed produces a light colored, and delicately flavored honey, and is a welcome addition to the clover flow.

As soon as possible after the bees are on location, all hives are given two supers, and the queen is permitted the full run of the hive. For this reason, we have little trouble with swarming. More supers are added to the hives as needed. At approximately mid-June, the queens are placed below the excluders, in one brood chamber, so that all the brood will be hatched by the time the crop of honey is removed. This is a very busy time for us. The honey crop must be removed from the bees, and the hives then moved, within the shortest possible time, to other locations.

We travel westward again into the mountain region with several yards, however, the bulk of the bees are moved to the Eastern Shore. In the mountains we find considerable blackberry, black locust, basswood, and clovers. Because of the difference in altitude, ranging from 600 feet to 3000 feet, and the different exposures on the mountainsides, the honeyflow from the same floral sources is prolonged. For example, black locust, which begins to bloom at 600 feet in early May, is just beginning to bloom at 3000 feet in mid-June. It is possible to obtain a good crop of this exceptionally fine honey by moving the bees two or more times, for a total of

One of Shearman's yards in the clover of western Maryland. (He also furnished the pictures for Kelly's article on pages 423 and 424.)

View from Shearman's airplane showing some of the bean fields on the Eastern Shore in Delaware.

about fifty miles. In practice, however, most of the crop is usually secured from basswood, clovers, and blackberry.

On these long summer moves, since the weather is usually hot, the bees are hauled with open entrances. If confined, there would be great danger of the bees smothering. We move at night and do not drive through any large towns. Therefore, we experience no difficulty, even though the outsides of the hives are covered with bees.

On the eastern shore of Maryland and Delaware there are some tulip poplar and clover, which bloom early in the season. However, the main honeyflow is derived from lima beans, of which there are large plantings in both states, but predominately in Delaware. This plant starts blooming in early July and, due to the successive plantings, continues to bloom until mid-September. It is in this section that the honey produced is almost 100% from one source, lima beans. In years past, the lima beans have been a reliable source of nectar, but in recent years, for reasons of which we are not certain, there has been a definite decline in the amount of honey gathered. During the lima bean season, the bees sense the coming of winter, and take very good care of the brood chamber for stores.

On the Eastern Shore fields are large and level. This enables us to use our airplane to advantage. In most cases, we can land the plane close to the bee yards. To drive from home around the bay to the shore requires two and one-half to three hours; to fly across the bay from home, about forty minutes. Therefore, on trips for requeening and checking, when it is not necessary to haul equipment to or from the bee yards, the airplane is a great time saver. It is also very helpful in spotting desirable locations for outyards. Concentrations of the various floral sources can be easily seen from the air.

All this activity, along with extracting, bottling, and selling of the honey provides plenty of headaches as well as backaches, but there is also plenty of interest and pleasure, and never a dull moment.

Glenarm,
Maryland

Changes in New Jersey

by E. A. FISHER

Beekeeping here in New Jersey has been slowly changing in the last few years. I started as a hobbyist soon after World War II, and went into the commercial end of it in 1950. The beekeepers of this state are of the hobby class for the most part, and handle their bees as hobbyists do. In changing over to a commercial operator, I had to unlearn a lot about beekeeping, and learn an almost entirely new way of handling them. This fact is hard for most hobbyist beekeepers to realize or understand.

I believe that the commercial beekeeper is on his way out, in this state. Land is being cleared and built up into towns, factories and homes. The land is being more completely used by the farmers. This all leads to much less bee pasture, and so makes it increasingly difficult for the commercial man to find the necessary pasturage for his bees.

It is vital to the state's fruit growers that the commercial men still bring bees into the fields for pollination, but to be able to do this in the future, the commercial beekeepers are going to have to go out of state to find the proper pasturage for their bees. So, I feel that beekeeping in this state will gradually fall back to the hobbyist with his small number of bees in one location.

The honey crop has dropped off in the last few years, and so it makes it unprofitable for commercial ventures. The hobbyist still gets an occasionally good crop, but none to compare with those that were obtained in the early '40's. A number of years ago it was possible to put out bees for pollination and still get a crop of honey. In the last few years that I worked in pollination, I was unable to get extra honey from my pollinating bees, and often found that they did not make enough honey to winter on. This of course made it necessary for me to do a lot of feeding during the winter. I am now out of the pollination end of the business but have been considering putting my equipment to use in making a bit of honey. If I should go into the honey angle, I feel that a certain amount of the bees will have to be in other states if the venture is to be worth while.

Lebanon
New Jersey

A South Jersey queen yard.

I Like Jersey

by MILTON H. STRICKER

The title of this article sounds as though I am chief salesman for the New Jersey Chamber of Commerce. On the contrary, I am just an ordinary beekeeper who finds New Jersey an ideal place to keep bees, and maybe you'll see this industrial-residential state more of a beekeeper's state if you'll listen to these brief reasons.

Even though high taxes and the increase in population are squeezing the farmer out of New Jersey, there are still enough orchardists, blueberry and cranberry growers, lima bean and cucumber producers to make it interesting for the beekeeper who wishes to supply bees for pollination. Since the farmers needing pollination are farming high priced land where taxes are high, they need pollination to increase their crop yield. In fact, they will all tell you that to survive in Jersey, you must do intensive farming. This makes them a better potential for the would-be pollenculturist. Perhaps this accounts for New Jersey pollination prices holding at a steady eight to ten dollars.

Tulip poplar has been yielding bumper crops of honey in the northwestern part of this State in the last few years, making many beekeepers honey conscious. Honey prices have been steadily increasing so that a beekeeper with a crop can see a profit. Demand for dark North Jersey honey has been exceptionally good.

Due to the honey business, many beekeepers have increased their holdings and are now running more colonies for this business than ever before.

Jersey bred queen bees seem to be the coming thing. At present only a few breeders are producing, but the demand is good and going to get better as time goes on.

The New Jersey Beekeepers' Association has always been interested in improving methods of beekeeping and now it has started a committee on stock improvement so its members expect great things to come from this investigation.

There are some problems facing the New Jersey beekeeper, such as European foulbrood, increase in insect spraying, and the population increase, which is taking up land that is now bee pasture, but what state doesn't have its problems.

Right now if you would weigh the problems against the advantages, New Jersey stacks up as a darn good bee state.

Stockton,
New Jersey

Bees being readied for pollination.

Bees loaded for a pollination job.

Some New England beekeepers. Left to right: Benjamin Bosworth, R.I.; Aylmer J. Jones, Massachusetts; Dr. Richard Taylor and Percy McIntosh, Rhode Island.

Rhode Island Beekeeping

by DR. RICHARD TAYLOR

Experience in this smallest state shows the folly of relying on statistics that show honey production by states. Bee pasture is where you find it, and a few miles sometimes make a huge difference. An apiary near my home produced a very dark, delicious honey in great quantity this summer, while one of my other apiaries, ten miles south, produced a very light honey in abundance. The honey from any one apiary is seldom similar to that of any other, even though some are separated by only two or three miles.

Rhode Island soil is acid, and hardly any clover is grown. There is farming in one area of the state, but not of the kind that helps bees much. We depend mostly on wild flowers, with which we are generously blessed. After dandelions and fruit bloom we can usually expect a surplus from lindens and locusts in some places. After that, the bees gather from all sorts of wild blossoms, until the sumacs begin to yield, and this is a dependable source. We would be lost without it. Clethra, often called sweet pepperbush, sometimes yields heavily in August near wooded areas. This plant flourishes only along the Atlantic seaboard. The large bushes grow along the edges of woodlands, and sometimes fill the woods with their powerful sweet fragrance. It is a great thrill for the apiarist.

About the same time Canadian thistle comes out in certain areas. This is a large, clover-like plant that spreads densely over meadows and abandoned fields. It is rarely seen in the northern part of the state, but acres of it can sometimes be found a bit to the south. A beekeeper who has colonies where this plant grows has no problems, for it yields a light, fast-granulating honey in great abundance. In September the goldenrods come out, imparting a rank odor to the apiary, and a bit later, the New England asters. Goldenrod honey, once ripened, is golden to the eye and delicious to the taste, though it is a bit too aromatic for some palates.

A blend of all Rhode Island honey in a typical year would be amber. It is almost always of excellent flavor. Some of our beekeepers complain that their honey is too dark, but they haven't learned to put colonies where Canadian thistle blooms. People in southern New England are suspicious of the clover honey offered by chain stores, which they imagine is synthetic.

A few colonies here yield a hundred and fifty pounds in a normal year, but a sixty pound average is a more realistic expectation. This presupposes that the bees are properly managed; the actual average yield, taking all the beekeepers together, is much less.

Eight or ten colonies are enough for any one spot. Because the flow is prolonged, queen excluders are a necessity. Without them, the bees consume the honey in brood rearing almost as fast as it comes in, the queen meanwhile laying all up and down the hive.

The climate is mild, and rainfall about right. Winter packing is unnecessary, and because the winter is mild and relatively short, a shallow super of honey sees the bees through to spring in fine shape. Colonies wintered in two full-depth hive bodies have more stores than they can use for winter consumption and spring build-up.

Barrington,

Orchard Pollination In Central Connecticut

by CYRIL B. SIMPSON

New England is well known for its changeable weather, so bees that will work under adverse conditions and especially in cool and damp weather are wanted. Therefore, bee yards are visited at any time when the bees might be expected to fly, and the flight from the different hives noted. Any hive sending out too few bees in comparison to the others is requeened from selected stock.

Story and a half hives, well filled with bees and brood and with a shallow super added are used when they go into the orchards. The super is used to help prevent swarming, which occasionally happens, although each hive is checked before moving. As a rule another check is made the day after the bees are placed in the orchards and if through error a wrong colony has been picked, another is brought in and the original one remains.

Overwintered colonies are used, but on occasion package bees are substituted with the full agreement of the fruit grower who is renting the bees. When this is done 2 lb. packages are installed during the first week in March, and three weeks later 2 additional lbs. of bees are added. During this time and until they go into the orchard, feeders containing sugar syrup are in the hives constantly, to stimulate egg laying. This results in colonies ready for pollination by the first of May which is a few days before the orchards normally bloom in central Connecticut.

Bees are placed in the orchards and removed on twenty-four hours notice. Each hive is set on two apple boxes, facing east to get the morning sun as early as possible. The fruit growers, who are seldom around at night, place the correct number of boxes at the locations previously selected, so they are quite easily found when the bees are moved in.

Some of the orchards which are pollinated constitute part of a group of eleven which border on one another, but despite this, only once in more than twenty-five years has there been any loss from spray poisoning, and that was eight years ago. This would indicate that co-operation between fruit growers and beekeepers makes for few poisoning problems.

While this has never been a large pollination service, it has been in operation for almost thirty years, and at one time placed in the orchards approximately three hundred colonies annually. Now, with many orchards being converted into building lots, only a fraction of that number is being set out.

Portland,
Connecticut

The Florida Apiary Inspection Program

by W. G. COWPERTHWAITE

The problem of American foulbrood disease was responsible for the Florida State Legislature's enactment of the Bee Disease Act of 1919. Today, 42 years later, American foulbrood still is a problem, but the disease has been controlled to the extent where Florida enjoys the lofty position of ranking third among the nation's producers of honey.

In 1919, American foulbrood was considered as big a threat to the honey industry as was citrus canker to the orange growers of the state. Citrus canker, as you may recall, was directly responsible for the creation of the State Plant Board, the organization that was given authority to conduct the bee disease eradication program. The State Plant Board now is the Division of Plant Industry of the State Department of Agriculture.

The bill providing for the prevention and eradication of diseases of honey bees was introduced by Representative Thomas C. Ray of Calhoun County, where honey production was an important industry. The Act carried an appropriation of $5,000 per year, not nearly enough even at that time to maintain an adequate program.

Execution of the new law was placed under the direct supervision of Plant Commissioner Wilmon Newell, who had a good background in apiary practices. One of the first steps taken after adoption of the law was initiation of eradication work against American foulbrood in two west Florida counties. All colonies of bees and all used beekeeping equipment shipped into Florida thereafter had to be accompanied by a certificate of inspection from the state of origin.

C. E. Bartholomew of Orlando was appointed in July as assistant to the plant commissioner in bee disease eradication and the following month C. F. Glenn of Wewahitchka was named district apiary inspector. Dr. Newell and his two aides concentrated their efforts in the Apalachicola River area and managed to inspect 3,800 colonies of bees during the first quarter of that fiscal year.

A second district inspector, J. P. Anthony of Apalachicola, was hired in September and assigned to Franklin County. By the end of that first year, 15,007 colonies had been inspected and 103 colonies found infected with American foulbrood and destroyed.

In contrast, the 1959-60 records show 149,227 colonies inspected by the present eight-man field force, with 1,422 infected colonies found and destroyed.

From these figures, it is evident that the state is holding its own against the disease, despite rapid growth of the honey industry in Florida and a big increase in the traffic of bees into the state. It has been estimated that one half of all bee diseases discovered in Florida can be traced to migratory beekeepers or bees from other states. Beekeeping today has acquired a national flavor, with keepers moving their colonies long distances to insure continuous sources of nectar.

The size of the American foulbrood problem was evident in the early days of the program, with the result that two additional district inspectors were appointed in 1920 and assigned to the Pinellas-Manatee area.

In that year Bartholomew resigned as assistant to Newell and Charles A. Reese was named to the position. The following year, veteran inspector J. C. Goodwin assumed the position and remained there until 1926 when he became nursery inspector and was followed by Robert E. Foster in the apiary position. Mr. Goodwin later won renown by discovering the presence of the Mediterranean fruit fly in Florida. As you may recall, he had picked up some grapefruit in Orlando in 1929 and when he prepared the fruit for a meal at his Gainesville home a week later he found the larvae which turned out to be that of the Medfly. His prompt action in reporting the find started the first successful eradication of the Medfly in Florida.

The Bee Disease Law of 1927, more or less the basis for today's regulatory structure, was enacted by the State Legislature in a move to strengthen the entire framework of the program. An amendment in 1939 provided that beekeepers from other states furnish the State Plant Board with a certificate of inspection showing no case history of American foulbrood in the two years prior to movement of colonies into Florida. The inspection must be made within 30 days preceding the move. Notice also had to be given of the approximate date of moving and the destination to which the bees would be shipped.

On August 10. 1946, the State Legislature authorized the use by the State Plant Board of sulfathiazole in the treatment of colonies infected with American foulbrood. After a 10-year trial, the rule was rescinded on May 17, 1956.

The 1947 State Legislature passed a law prohibiting all movement into Florida of used beekeeping equipment and bees on comb, but the law was ruled invalid the following year by a state circuit court. Such movement then was permitted when accompanied by a certificate of inspection.

Robert E. Foster retired in March 1948 from the State Plant Board and from the position which now was known as chief apiary inspector. Actually, the title had undergone one other change during his 22 years in office—from assistant apiary inspector to apiary inspector. Foster was responsible for making the bee and honey exhibit at the Florida Fair at Tampa an outstanding success.

Mr. Foster served several terms as president of the Apiary Inspectors of America, one term as president of the Southern States Beekeeping Federation, was a member of the Board of Directors for the American Honey Institute for 11 years and was a lifetime member of the Florida State Beekeeping Association.

He was succeeded in the position by Hardin S. Foster, a district apiary inspector who was no relation. The new chief gained nationwide repute as an authority on bees and did much

* A talk delivered at the Beekeepers' Institute University of Florida. Dr. Cowperthwaite is the Director of the Florida Department of Agriculture's Division of Plant Industry.

to boost the Florida industry into the ranks of national leaders. Mr. Foster's reputation was so widespread that upon his retirement in 1957 he was sought as a consultant by many Caribbean countries anxious to increase vegetable yields through pollination.

Another inspector was elevated to the post of chief, with Russell A. Martin succeeding Hardin S. Foster. Martin did an outstanding job of applying education and information tactics to apiary inspection in Florida, combining a fine talent for photography with an ability to use the photos in illustrating talks before apiary groups. One of his finest pictures was reproduced as the color cover for the State Plant Board's 1958-60 biennial report.

Martin resigned in May of 1961 and was succeeded by Philip M. Packard, who had to leave a place on the Commissioner of Agriculture's Advisory Council in order to accept the position.

A state act which became effective on July 1, 1957, provided for compensation for bees and equipment destroyed by the State Plant Board because of American foulbrood.

Although the state dropped the practice of using drugs and antibiotics in fighting American foulbrood, it still is viewed as a good preventive measure, once a colony has shown evidence of American foulbrood. Most beekeepers are burning bees and equipment.

The Apiary Section's field force at the present time is made up of the following inspectors:

George C. Guilford of Blountstown, who covers the counties of Bay, Calhoun, Escambia, Gulf, Holmes, Jackson, Okaloosa, Santa Rosa, Walton and Washington.

J. C. Herndon of Tallahassee, who covers the counties of Franklin, Gadsden, Jefferson, Leon, Liberty, Madison, Taylor and Wakulla.

Mark M. Bryant of Gainesville, who covers the counties of Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Lafayette, Levy, Nassau, Putnam, St. Johns, Suwannee and Union.

S. D. Harvey of Mount Dora, who covers the counties of Citrus, Lake, Marion, Orange, Osceola, Seminole and Sumter.

Leroy Putnal of New Smyrna Beach, who covers the counties of Brevard, Indian River, Okeechobee, St. Lucie and Volusia.

Owen C. Albritton of Alturas, who covers the counties of Hernando, Hillsborough, Manatee, Pasco, Pinellas and Polk.

T. R. Yeomans of LaBelle, who covers the counties of Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Highlands, Lee and Sarasota.

Henry W. Russell of Homestead, who covers the counties of Broward, Dade, Martin, Monroe and Palm Beach.

1961 HONEY PRICE SUPPORT PROGRAM

In response to a number of inquiries, The American Bee Journal sets forth the following information for those desiring to make use of the 1961 Honey Price Support Program.

Loans are made and honey delivered under a purchase agreement will be purchased at the following support prices:

	cents per lb.
For states of Montana, Wyoming, Colorado, New Mexico and states west thereof:	
1. White and lighter table honey	12.0
2. Extra light amber table honey	11.0
3. Light amber table honey	9.5
4. Other table honey and nontable honey	7.5
For all states east of Montana, Wyoming, Colorado and New Mexico:	
1. White and lighter table honey	12.9
2. Extra light amber table honey	11.9
3. Light amber table honey	10.4
4. Other table honey and nontable honey	8.4

The honey must be packed in new 5-gallon cans or new or reconditioned drums. Loans are made only on honey in approved storage but honey under a purchase agreement does not have this requirement.

To apply for a loan or to enter into an agreement that the Government will purchase your honey providing you do not sell it, you go to the county office of the Commodity Stabilization Service in the county in which your honey is stored. In case your county office is not familiar with how this is handled, information can be obtained from the following regional offices:

Evanston, Illinois, 2201 Howard Street — serving Connecticut, Delaware, Illinois, Indiana, Iowa, Kentucky, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia.

Dallas 1, Texas, 500 South Ervay Street — serving Alabama, Arkansas, Georgia, Florida, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee and Texas.

Kansas City 41, Missouri, 560 Westport Road — serving Colorado, Kansas, Missouri, Nebraska and Wyoming.

Minneapolis 10, Minnesota, 6400 France Avenue South — serving Minnesota, Montana, North Dakota, South Dakota and Wisconsin.

Portland 5, Oregon, 1218 Southwest Washington Street — serving Arizona, California, Idaho, Nevada, Oregon, Utah, Washington and Alaska.

On loans, a service charge amounting to 5 cents a hundred pounds is required and the loan bears interest at the rate of 3½ per cent a year. Unless demand is made earlier, loans will mature on April 30, 1962. Of course, the loan can be repaid any time the producer sells his crop.

For a purchase agreement, a service charge of 2½ cents a hundred pounds is made. Application for either a loan or a purchase agreement may be made any time between now and December 31, 1961.

Let's Have a Marketing Order

Local beekeepers usually do a good job of advertising and promotion of honey, but on the organizational level they fail to fully cooperate with the other parties. In the 1959 and 1960 check-off-plans, there was poor cooperation between the honey packers and beekeepers to offer to buy check-off stamps when they sold their honey. In my case, I would forget to ask for check-off stamps when I sold honey.

I am, therefore, in favor of a comprehensive qualified "marketing-order" for honey. By cooperating with federal officials, we probably could work out a mandatory fund for promotion, advertising, and research. A marketing-order for honey would give us an important tool for self-help.

Irwin Klaassen,
Whitewater, Kansas

Honey Under Loans

Aug. 31 report of Honey Price Support operations lists a total of 774,820 pounds under loan on that date. Of this 645,370 pounds was from Florida.

This compares with 712,000 pounds on the same date a year ago. It is more than in 1959 and some 10 percent less than in 1958.

The Commercial Operator

Editor - S. JOAQUIN WATKINS

Harvesting Honey With Propionic Anhydride

by KEITH M. DOULL

Waite Agricultural Research Institute, Adelaide, South Australia

The use of propionic anhydride to drive bees from the combs at honey harvest time offers important advantages over the old phenol method used by beekeepers for so many years. Most important is the fact that it does not irritate the bees, and in fact may help to quiet irritable hives.

However, the phenol method is one which has been used for a long time very successfully, and it is important that any new method should not result in an increase in cost of material or labor. Moreover, the new method should be one which can be used by *all* beekeepers under *all* conditions.

The fume chamber method developed by USDA workers does not completely fulfill these requirements. A simple repellent board should prove adequate, provided the right concentration of the chemical can be determined.

Some pilot experiments to test the validity of this idea were carried out. In the first series of experiments, an acid board with a single thin layer of cloth was used. This proved unsatisfactory, as the fumes were released too quickly. It was replaced with a flat repellent board with a Celotex absorbent pad.

In the first experiment, the boards were charged with concentrations of 50%, 25%, 12½% and 5% anhydride-water mixtures and placed directly in the top of the super. The results were not satisfactory, since the bees in the top super were stupefied, while those in the lower supers were driven out of the hive. It was obvious that the fumes should reach the bees slowly to avoid stupefying those in the top super.

A further series of tests were made with the repellent board placed on an empty shallow super on top of the hive. Results generally were satisfactory, but it was noticed that at all concentrations the bees were stupefied if too much of the mixture was used.

A final series of tests was made with a repellent board with 2¾" sides, and with a Celotex absorbent pad, placed directly on top of the hive. A 10% anhydride-water mixture was used, and the board was given an initial charge of about 2 tablespoons of the mixture. This was completely satisfactory for two or three supers, after which a "freshening" charge of 1 tablespoon was sufficient for another hive. The repellent boards were left on the hives for five minutes in each case. There was no noticeable disturbance of the bees at the entrance, and in most cases there were fewer bees left in the supers than is usual with phenol.

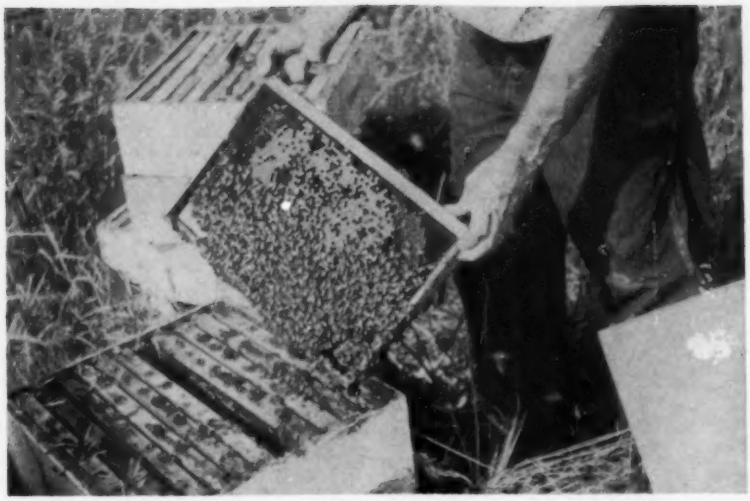
As a final test, three supers were taken off one hive, leaving only the brood chamber. The board was "freshened up," and placed on top of the brood chamber. Most of the bees were driven out of the hive in five minutes, and an examination of the combs showed that the bees had been driven down evenly to the bottom third of the combs.

A test was also made on a single hive. This was a hive with full depth supers. The USDA fume chamber was used, but the perforated dispersing board was removed and the bellows was not used The absorbent pad was charged with an ounce of 20% anhydride-water mixture, and after 5 minutes the super was cleared of bees.

It was noticed that when the bees were given an opportunity to escape

Making trial mixtures of propionic anhydride and water. Left to right, William Carlile; Richard Krekel; Keith Doull.

Bees are out of the shallow supers and PA board is on hive body. Bees driven from body show on the ground.



Bees, driven from the hive body, quickly come back on the combs after board is removed. (All photos by John Guilfoyle, Brisbane, Australia.)

from the top super, they readily did so. In most of the later tests the repellent board was offset by about ½ an inch and many bees left by this gap. Since they were not irritated, it made no difference whether they flew from the top of the super or went down to the lower supers.

Way Back Yonder in Ontario

by GLEN HOLTERMAN

Beekeeping was considered an almost honest way of stealing a living. I can still hear my father's disgust when someone said "It's a nice way of making your keep." The answer was "Fence corner beekeeping is always a surprise because you get stung or because you don't."

Chunk honey in glass in the old days was a favorite. It sold with the advice that it be used soon for it was not nice when granulated. Once a 700 pound barrel of honey was set up in a local store, Vanstone's. The staves were removed and the honey was sliced and sold like cheese. It was winter then and heating kept the air dry and the honey sold quickly because of the novelty. It was white honey, ripe and finely granulated.

In Ontario we have never had the suspicion of purity connected with granulation. Every honey pail had the inscription, "All pure honey will granulate sooner or later. To liquefy, place the can in water no hotter than the hand can bear until the honey is perfectly clear."

Honey has been sold for about thirty years now, "Dyce" processed to produce a uniform and easily spread article. Just recently liquid honey in glass is beginning to appear and is capturing a whole new market. Sales in the States could well take a cue from this and push the sale of honey granulated by the Dyce method. Purity should be taken for granted and not stressed. The effect of high southern temperatures in summer should be watched.

These new packers of liquid honey have "discovered" that packing honey hot with the resulting vacuum delays regranulation. The Root Company's "Airline" pack did that four years ago. I remember H. H. Root showing me a small one-serving bottle for use in Pullman dining cars sealed hot. These packs must be cooled quickly before placing in cartons. A lot of U.S. honey has been above 145° for 15 minutes and this treatment darkens the color and removes delicate aroma from the original product.

During my boyhood we moved bees by horse and hayrack thirty miles to a buckwheat area. At the end of the clover flow about August 1st, the choice colonies were supered and stripped, ready to close the portico screens on the chosen night. At dusk five wagons with hayracks level with hay gathered at the location. I would drop the screens down and tack them fast while the teamster carried the colonies out to be placed and tied. All loads were completely ready before the teams were brought. The horses were placed about fifteen feet ahead ready to go when the tongue was slipped into the neck-yoke ring while on the move and the loose bees were left behind. A moonlight night was chosen if possible. Falling stars were a sight to behold as we rode along.

Dad was always a conscientious man but the boys did want a drink out of those 40-gallon milk cans that were on stands by the road in front of every farm ready for the cheese factory to pick up in the morning. They never got a drink either; that is until one of the men slid ahead on foot in the dark to a place where the house was back on a long lane and offered the travelers when they arrived a cooling dipper and an invitation. I think Dad was only half mad when the man who served the milk got on his wagon with the rest. It was a rewarding joke. Buckwheat was a fast crop but now it has joined the group of "way back when."

Waterford, Ontario

Error on World Production

In our July issue, we mentioned that the world production of honey was estimated to be in excess of a half million pounds. We were quite under the estimate as this should have read a half billion pounds. This would quite well coincide with the rest of our figures in this article inasmuch as the U. S. production is in excess of 200,000,000 pounds.

Correction on this was made strangely enough by one of our good subscribers, Mr. Percy St. Louis, in Grenada, W. I.

Mr. St. Louis has quite a different problem from us here in the U. S. He says they have no fall or winter there. The sun shines throughout the year and brood rearing and honey production continue the year around.

In such a case bees are very difficult to manage and swarms may come any time from July through the following June. Mr. St. Louis says that the only remedy is plenty of appliances like large brood chambers and supers with bee comb foundation and they in that region have great difficulty in getting these except at double price in view of the currency rate.

The potentials of beekeeping in his region are wholly unexplored and the demand for honey is not too great on account of the lack of education about the value of honey as a food.

Apicultural Science

Editor, DR. WALTER C. ROTHENBUHLER
Iowa State University
Ames, Iowa

An Understanding of Dancing Behavior

by DR. W. WITTEKINDT
Bonn, Germany

Countless experiments on the occurrence of dances in bee colonies have shown what an important part the advertising-dance patterns play in the transmission of reports about situations in the flight area of the colony. Bees which perform a round dance, a sickle dance, or a waggle dance do not only inform their companions in the hive of the location where they have discovered something (v. Frisch, 1923, 1946, 1951; Hein, 1950; Tschumi, 1950; Lindauer, 1951, 1954, 1955; Boch, 1957), but, through the persistence with which they repeat the respective dance pattern, they also indicate the probable recompense for searching out the respective locations which they have just advertised as sources of nectar, pollen, water, or propolis. The same persistence can also indicate the probable suitability of a location as a new home for a swarm which is ready to leave the hive. (v Frisch, 1923, 1946; Park, 1923; Lindauer, 1951, 1954, 1955.)

Since the needs of the individual colony change continually during the year, it is reasonable to assume that this also affects the conduct of the dancers. The respective conditions in the flight area would then be coordinated with the respective necessities of the colony itself by the dance behavior of the foragers. How much of a change the situation outside the hive can produce in the behavior of foraging bees was extensively investigated through experiments with artificial feeding stations at which groups of bees were trained. The results showed that the feeding stations located some distance away from the hive had to be supplied with a sugar solution of a much higher molarity in order to effect as much dancing as those which were close to the hive. (Beutler, 1950, 1954; Boch, 1956.) Basically, however, the standards of the bees for sugar water change during the course of the year, depending on the quality of the nectar in the plants which are blooming at the time the test is made. (Lindauer, 1948.)

The readiness of the foraging bees to dance and the intensity of their dance can be influenced through the supplementing of aromatic and tasteful substances in the sugar solution, from which materials may be distinguished which both accelerate and retard the dance activity. (v. Frisch, 1934, 1942; Lindauer, 1948; Kascheff, 1957.) It is however repeatedly established in such experiments that the individual bees of a foraging group react differently and that there are "good" dancers and "bad" dancers. (Lindauer, 1948.)

While we are well informed about the effects of conditions outside the hive on the dance behavior of the foraging bees through these experiments, we still know very little about the relationship between the respective situation within the hive and the dance behavior. It is most interesting to observe which changes in the hive situation are noticed by the bees and in what manner the necessary adjustments are made. An experimental way to further clarify these relationships seemed to have been found after bees which had not flown were successfully stimulated to the different dance activities. (Wittekindt, 1955, 1957.) The experiment was arranged with bees which had been hatched in brooders, which were individually marked and the resulting little colony, together with a queen, was moved into an observation hive. A small box with a glass cover was fastened to the entrance of the hive in which sugar water could be offered to the bees. With the help of built-in-heating — controlled by a contact thermometer — the inside temperature of the observation hive was normally held at 30-34° C. In special experiments it was possible, due to the built-in heating, to test the dependence of dance behavior on various hive temperatures. In the "dance inducing experiments" (Anstossversuche: Wittekindt, 1955) sugar water was offered to the experimental colony in the box at all hours of the day and night and the behavior of all bees returning from the food was observed and recorded. It was seen that readiness to dance and intensity of the dance are clearly increased when the temperature in the hive remained between 28-36° C. If the temperature in the hive was lowered past 28° C. the number of round dances performed within a definite period of time steadily decreased. On the other hand, if the temperature was steadily raised from 23° C. during a hive feeding (Anstoss experiment) then round dances were often performed as soon as a temperature of 28°C. had been passed.

The influence of the respective supply situation in the hive both on the individual dancer and on the whole group can likewise be tested. In experimental colonies whose combs contained only a small amount of honey more foragers were induced to perform a round dance and the dance lasted longer than when the bees were on full combs. In a like manner it was shown that the presence of many open brood cells works as a dance accelerator, while a lack of brood cells can act as a restriction on the number and intensity of dances.

After it had been shown that the different environmental factors in the hive play a part in the dance behav-

ior of the collecting bees the question arose as to just how this happens. The careful observation of each single bee which visited the feeding station showed that its dance behavior is heavily influenced by the behavior of the other bees which are interested in the dance, as Lindauer (1954) had already observed. For example, the readiness of a forager to dance can be increased if the collected sugar water is eagerly taken from her by the bees in the hive. Her dance behavior can likewise be positively influenced if she is followed by a group of bees, when she begins to dance, which runs after her during the execution of the dance pattern. It follows that with higher hive temperatures more bees are available for collection of food and are interested in the dancing bees than is the case with lower hive temperatures, since many more bees are necessary for the generation of heat to raise the hive temperature. If many open brood cells are present in the hive this likewise has an effect on the bees interested in the dance, since their desire to provide the nurse bees with food is increased and they therefore give the dancers more attention.

However these observed interrelationships are not alone sufficient to explain the dance behavior of the bees in regard to its dependence on the environmental conditions in the hive. It was observed that the environment in the hive can also directly affect the dance-readiness of the foragers. It resulted, for example, that the dance-readiness of those bees which were kept in a heated hive for a longer period of time (24-48 hours) between two experiments (Anstossexperimenten) was so great that they began to intensively perform a round dance (waggle-round dance) immediately after feeding in the hive began, thereby showing themselves to be independent of the behavior of the other bees in the hive. At this time no so-called dance area had yet been developed, where the first good gatherers are awaited by interested hive bees. Thus the intensive waggle-round dances of these first foragers were also performed at different places in the hive. Further attempts in this direction showed finally that the dance-readiness of the individual bees, which appeared at the feeding place during the various experiments, is quite diverse. The desire of a bee to dance can be so great that they dance intensively upon their return to the hive regardless of the situation which confronts them there.

Dr. Wittekindt with one of his observation hives with built-in heating controlled by a contact thermometer. (Photo by Dr. Elisabeth Wittekindt, Bonn, West Germany.)

A bee (marked) performing a waggle dance directs her waggle run within the dance 55 degrees to the right. This indicates she has followed a course 55 degrees to the right of the direction from the hive to the sun to reach the feeding ground. Note the nine interested bees following her through her dance.

In the same experiment other bees limited themselves solely to the transporting of the received food to suitable cells (Special experiments showed that these bees could not then be induced to dance, even if the quality of the food was substantially improved). There are nevertheless countless levels between these two extremes of behavior. This is due to the large number of bees whose dance behavior is accelerated or retarded by the different environmental factors in the hive, whereby these factors determine their final dance behavior. The respective dance mood at the beginning and during the course of an induction experiment can be recognized by

observation of all the dance patterns and types of movement which pledge the individual bee to the collection of food.

The following behaviorisms can be distinguished: (1) "winding course" (Das Durchwinden) — the bee returning from the feeding ground forces its way between its companions in the hive and gives many of them a tiny sample of the food it has brought (Wittekindt, 1960 a and b); (2) "waggling winding course" (Das schwänzelnde Durchwinden) — while the bee passes between her comrades and distributes samples of food she also performs waggle movements similar to those in the waggle run within the waggle dance (Wittekindt, 1960, a, b, and c); (3) "dance tendency" (Der Tanzansatz) — The bee, after distributing some food suddenly makes a turn as if she wanted to begin a round dance, but then again runs straight ahead, again makes a turn, goes straight ahead, etc. (Wittekindt, 1960 a, b, and c); (4) Dorsal-Ventral Abdominal Vibration — The bee clings to the other bees which she meets, after a few attempts to distribute food, and makes at the same time the characteristic abdominal vibrations (Milum, 1955, 1957 and Wittekindt, 1960, b, c, and d); (5) the "round dance" — the bee performs a normal round dance after giving away some food which she continues for various lengths of time and can interrupt to distribute more food (v. Frisch, 1923 and 1946); (6) the "waggle-round dance" — the bee combines waggle movements with the performance of a round dance pattern (Wittekindt, 1955, 1960, a, b, and c); (7) the "tremble dance" — the bee performs this dance mostly on a few certain comb positions for a longer period of time (up to 20 min.), whereby she steadily shakes herself as if she wanted to free herself of something (v. Frisch 1923, Lindauer 1948, Wittekindt, 1960 c). The tremble dance has a certain similarity with the grooming invitation dance described by Milum (1947, 1953) but can clearly be distinguished from this.

The consideration of all these rhythmical movements and dance patterns, which can partially also occur in combination with each other, made it possible to further clarify the causes and various reactions of the individual foragers. The "winding course" and the "dance tendency" were recognized to be preliminaries to the recruiting dance forms (e.g. round dance, etc.). They occur when not all the conditions necessary for the performance of a complete dance by the bee in question have been met. However, an alarming and disturbing effect on the bees interested in the dance is produced by these two patterns. On the other hand the D-VAV is an expression of limited dance capability. An alarming of other bees, to search out the feeding place, will clearly not be completely effected by this behavior. The tremble dance, which was partially performed by bees, which were just 6 days old, after their first visit to a feeding station proved to be a reaction, in agreement with Lindauer's conception (1948), to a shock which the bees had received while collecting food (Wittekindt, 1960 c).

The explanation of these relationships makes it possible to determine how important the talent and mood of the individual bee is within the sum total of all the appearing mannerisms. From the type of preeminently occurring reactions one can realize how the respective experimental arrangement affects the foraging bees as a whole. It was thereby possible to gain an insight into the normal mechanics within the hive which have an effect on the dance behavior and make possible its adaption to the needs of the colony. Furthermore, observations which had been made on free flying colonies became more understandable through these special investigations since these behavioral patterns can also be observed in free flying colonies and are by no means the result of isolated experimental arrangements.

Certainly many readers will have noticed these behavior patterns in addition to the usual recruiting dances carried on by bees returning from natural feeding grounds and perhaps this classification and explanation of these behavior patterns will aid them in their own observations.

Literature Cited

1. Beutler, R. (1950) Naturwiss. 37:102.
2. Beulter, R. (1954) Z. vergl. Physiol. 36:266.
3. Boch, R. (1956) Z. vergl. Physiol. 38:136.
4. Boch, R. (1957) Z. vergl. Physiol. 40:289.
5. Frisch, K. v. (1923) Zool. Jb. Abt. allgem. Zool. u. Physiol. 40:1.
6. Frisch, K. v. (1934) Z. vergl. Physiol. 21:1.
7. Frisch, K. v. (1942) Naturwiss. 30:269.
8. Frisch, K. v. (1946) Österr. zool. Z.:1.
9. Frisch, K. v. (1951) Naturwiss. 38:105.
10. Hein, G. (1950) Experientia 6:142.
11. Kaschef, A. H. (1957) Z. Vergl. Physiol. 39:562.
12. Lindauer, M. (1948) Z. vergl. Physiol. 31:348.
13. Lindauer, M. (1951) Naturwiss. 38:509.
14. Lindauer, M. (1954) Z. vergl. Physiol. 36:391.
15. Lindauer, M. (1955) Z. vergl. Physiol. 37:263.
16. Milum, V. G. (1947) Trans. Ill. Acad. Sc. 40:194.
17. Milum, V. G. (1953) Proc. 8th An. Meeting N. Cen. Sts. Br. Ent. Soc. Am.:48.
18. Milum, V. G. (1955) Amer. Bee Journ. 95:97.
19. Milum, V. G. (1957) Int. Entom. Congress Canada.
20. Park, O. W. (1923) Amer. Bee Journ. 63:227, 399.
21. Tschumi, P. (1950) Schweiz. Bienenztg. 73:129.
22. Wittekindt, W. (1955) Naturwiss. 42:567.
23. Wittekindt, W. (1957) Leipz. Bienenztg. 71:322.
24. Wittekindt, W. (1960a) Naturwiss. 47:335.
25. Wittekindt, W. (1960b) Naturwiss. 47:550.
26. Wittekindt, W. (1960c) Forschung und Beratung, Dusseldorf 9:91.
27. Wittekindt, E. und Wittekindt, W. (1960d) Leipz. Bienenztg. 74:160.

Communication Among Social Bees

by Martin Lindauer

"Language" by which bees communicate with one another, is the subject of this fascinating book. The author describes in detail the experiments by which this language was deciphered. He explains how the forager bees tell others in the hive the direction and distance to a newly discovered source of nectar. Scout bees sent to find a new nesting place at the time of swarming describe the location and quality of the place they have found. When the swarm has decided which site is best—and it may take several days to reach agreement—the human observer who has learned the language knows just where the bees are going.

In fifteen years since Karl Von Frisch first reported how bees can communicate with one another by dances in the hive, much has been learned about modes of communication, not only among honey bees, whose language is the most highly developed, but also among other species of social bees and even among other insects. A former student and now a colleague of Professor Von Frisch, the author describes experiments that point the way to a deeper understanding of a subject that has long puzzled and fascinated the minds of men. Dr. Lindauer is Privatdozent and Oberassistent, at the Zoological Institute, University of Munich.

The book is cloth bound, illustrated, 141 pages and is priced at $4.75. Published by and available at the Harvard University Press, Cambridge, Massachusetts.

Copies may be ordered directly from the American Bee Journal office at price listed above.

Fun For The Family

***Editor*— Pat Diehnelt**
Rt. 1, N83, W13799, Fond du Lac Ave.
Menomonee Falls, Wisconsin

SCRAMBLE – CROSSWORD – RECIPES

NEXT YEAR'S COVER CONTEST

What do you know! So far there are four pictures entered for next year's cover contest which has been announced now for three months, including this month. One of the pictures is a dandy for the first of the year. Keep in mind the requirements. Pictures may be of a daughter or a son, or any near relative, portrait style; or in action with the bees or otherwise. One picture will be chosen each month for the cover for a $5.00 cash prize. Runners-up printed inside. Start sending your pictures now to Pat. She will be the judge.

THE OCTOBER SCRAMBLE ANSWER

For where's the state beneath the firmament that doth excel the bees for government — Guillaume Salluste

THIS MONTH'S SCRAMBLE

eeb eth erewh sksuc ereth cksu i ni a psilowcs elbl i eli

How to Substitute Honey for Sugar

In recipes for cakes, cookies and quick breads, substitute honey for ½ the sugar and decrease the liquid by ¼ cup for every cup of honey used. Add ¼ teaspoon soda for each cup of honey and decrease the baking powder by 1 teaspoon.

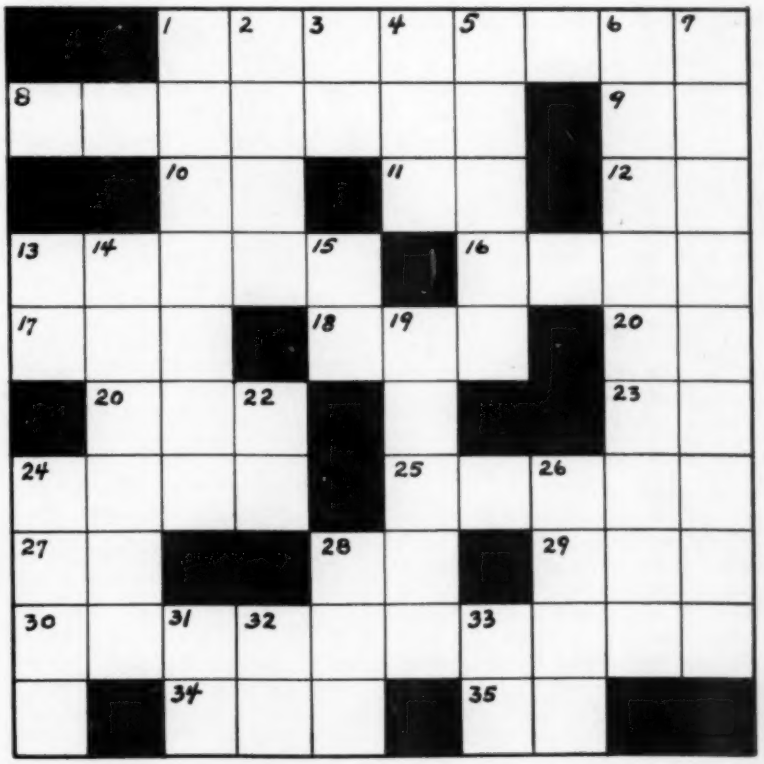
November Crossword Puzzle

ACROSS

1. Plant wax
8. Our favorite wax
9. Lawrence (abbr.)
10. Representing (abbr.)
11. 3.14
12. And (Latin)
13. Wax extractor
16. Brilliant fish
17. Consent
18. Suffix
20. Chromium (Symbol)
21. Repair
23. Greeting
24. Double (Combining form)
25. Boundary
27. Article
28. Danish (Abbr.)
29. Bird of cuckoo family
30. Processes of wax purification
34. John
35. Territory (abbr.)

DOWN

1. Mineral waxx
2. Poisonous snakes
3. Railway (abbr.)
4. Short sleep
5. Universal proposition
6. _____ of beeswax done chemically
7. Illness helped by bee stings
13. Pyridine (abbr.)
14. Acid is used to _____ wax
15. Musical note
19. Wax extractor type
22. 14th Greek letter
24. Poet
26. Large number
28. Haunt
31. Nickel (Symbol)
32. Daughter (Abbr.)
33. Pronoun



Your Questions Answered

EDITOR— **W. W. Clarke, Jr.**
204 Ag. Ed. Building
Penn. State University
University Park, Pa.

• *Question from*

Jack Speckman
Manhattan, Kansas
(March 24)

When should I put a comb honey super on in the spring? What is the best way for a back-lot beekeeper to render his beeswax? Where could I get the plans for a solar wax melter and a pollen trap?

Answer

Place the comb honey supers on the colonies at the beginning of the main honeyflow. In your area, this would probably be at the time of clover bloom. The bees are not likely to work on them before this time and the sections will be more heavily stained.

The back-lot beekeeper should rely on the use of the solar wax extractor to render his beeswax.

I doubt if you have any use for a pollen trap. It retards the activity of the bees, and probably reduces brood rearing during the time that it is being used.

I am enclosing a copy of the plan of a solar wax extractor designed by E. J. Anderson, The Pennsylvania State University; also, a drawing of a pollen trap we have used.

• *Question from*

G. U. Jessen
Moncton, New Brunswick
(March 23)

In a few weeks I will feed my bees pollen substitute and my recipe requires Brewer's yeast of animal type. It also requires expeller processed soy bean flour. Please can you tell me if I can use Brewer's yeast tablets (Dried yeast tablets U.S.P.) and soy bean flour specially prepared for carbohydrate restricted diets?

Answer

I see no reason other than cost why you could not feed Brewer's yeast tablets (crushed) and the specially prepared soybean flour to your bees.

I would suggest you purchase the prepared mix from one of the bee supply houses either in Canada or the United States of America: Woodman's Bee Supplies, Grand Rapids, Michigan, U.S.A.; Dadant and Sons, Inc., Hamilton, Illinois, U.S.A.; A. I. Root Company, Medina, Ohio, U.S.A.

All of the above companies list pollen substitutes in their catalogues.

• *Question from*
K. M. Williams
Atlanta, Kansas
(April 13)

I intend to produce bulk comb honey in shallow frames. I am wondering if honey produced on starter strips would be of better quality than honey produced on full sheets of thin surplus? In other words, would it have thinner and whiter comb?

Answer

I think the natural wax may be a little whiter and thinner but I wonder if you can get the bees to draw the comb straight without foundation. Most producers of bulk comb honey use full sheets of foundation. However, there are some who use foundation which is just short of the bottom bar.

• *Question from*
Vincent H. Kinne
White Lake, N. Y.
(Feb. 25)

I lost one colony of bees from starving. I cleaned up all the dead bees that I could, and burned them up. But there were quite a few left in the combs and a small amount of brood. Do you think if I give the combs back to my other bees, they will clean them up by taking the dead bees out or must I destroy them? The combs are nice and white and no mold. But like I said just a little brood on two of the frames. I wonder if they would clean that up too.

Answer

Bees are very efficient at cleaning out dead bees and brood from comb. However, dead brood **should** be checked by someone who can identify disease before it goes back into a colony. It is possible the dead brood may have been chilled, but it is also possible it was infected with foulbrood.

Bee Inspector, A. C. Gould, Albany, New York, or Dr. E. J. Dyce, Comstock Hall, Cornell University, Ithaca, New York, or the Bee Research Division, United States Department of Agriculture at Beltsville, Maryland, will be able to examine the brood and tell you whether or not it is infected.

If the colony had disease, all the combs should be burned in a pit and the remains covered with one and a half to two feet of dirt and the hive body and other equipment should be disinfected by scorching or boiling in lye water.

• *Question from*
John A. Swanson
Swea City, Iowa
(March 3)

It has always seemed to me that queen excluders are a hindrance to the bees. Would your shallow supers, in place of excluders, be just as effective in keeping the queen from entering the extracting supers during the season, or must one always use excluders to keep the queen down in the brood nest so she cannot get up into the supers above? If a shallow extracting super will keep her down in the brood nest will this result in greater honey storage since the bees do not have to work so hard to get through the excluder?

Answer

By G. H. Cale, ABJ

In my experience the 6⅝" shallow which I use altogether is better than an excluder, particularly in the production of extracted honey. However, in putting on supers I always super at the top above the supers where the bees are working vigorously. Should the top super be finished and sealed, then you'll have to go down until you get to where the bees are working hard and put your new super on there. In other words don't put the empties down next to the brood nest after the first supering or, of course, the queen will go into them. But when you top super this does not happen except in a very poor season and as you say, this plan without an excluder is inducive to greater honey storage.

Texas Beekeeping School
Nov. 12th - College Station

1 to 5 p.m. Biological Science Building, Texas A. & M. College.

Subject of the School: *A Season with Bees.*

Speakers will include Claud Burgin, Roland Sykes, Jack Happ, Curtis Meier, Walter Barth and Dr. A. Alex. Everyone is invited to this free school.

A. I. Root Co. of Texas
San Antonio

Minnesota Winter Meeting
Minneapolis, Dec. 2nd

Will be held at the Curtis Hotel, Minneapolis, Minn., December 2. A report by the Apiary Location Committee, headed by E. C. Honl of Winthrop, Minn.; a report by the magazine committee headed by Robert Banker, of Cannon Falls, Minn.; a report of the Honey Crop Survey and Marketing Day at Alexandria, Minn., will be made by State Marketing Chairman, Glen McCoy. A panel discussion on the "Honey Removal Procedure in 1961" with C. D. Floyd as moderator will prove very interesting and instructive.

A banquet will be served at 6 p.m., followed by colored slides and entertainment, including the "Lemon Sisters."

F. Q. Bunch, Sec'y

Midwestern Association
Kansas City, Nov. 12th

The Midwestern Association will hold its regular monthly meeting at the I.O.O.F. Hall, 812 Westport Road, Kansas City, Missouri, 2:30 P.M., Sunday, November 12.

The meeting will feature a speaker and the subject for discussion will be "November in the Bee Yard."

Refreshments will be served. Everyone welcome.

James A. Worrel, Sec'y

Alberta Convention
Calgary, Nov. 23-24

Place—Stampeder Hotel, Calgary.

Time—Registration 9 a.m., November 23.

Theme—Quality Control.

Prominent Speakers from Canada:

Dr. T. A. Gochnauer, Chairman of the Apiculture Section, Canada Department of Agriculture, Ottawa, Ontario.

Dr. Don Peer, Nipiwan, Saskatchewan.

Mr. John Corner, Provincial Apiarist, Vernon, British Columbia.

Mr. F. R. Armstrong, Chief Inspector for Honey and Maple Products, Canada Department of Agriculture, Ottawa.

Mr. Victor Mesley, President of Canadian Beekeepers' Council, Kemptville, Ontario.

Mr. Frank Garland, Manager, Manitoba Honey Producers' Co-operative. Mr. Jack Edmunds, Provincial Apiarist, Edmonton, Alberta.

Features:

Honorary Life Memberships will be presented to a number of long-time beekeepers for their contributions to the Association.

The Master Bee Farmer Award will be presented.

The Annual Banquet and entertainment will be sponsored by the Calgary and District Local Association.

Mrs. Clydie A. Bird, Sec'y

North Dakota Annual
Jamestown, Nov. 4th

The North Dakota beekeepers will meet at the Gladstone Hotel at Jamestown, Saturday, November 4th. We hope to have several items of interest on the display table such as new books, items of equipment, honey labels, etc.

You are invited to display any new or improved pieces of equipment or information you have of interest for both the amateur and full-time beekeepers who will be present.

Send display material to Dr. R. L. Post, Entomology Department, North Dakota State University, and plan on it arriving by November 1st so that I can arrange the displays in advance.

In the event that you have a company truck with special equipment I would arrange with the hotel in advance to reserve parking space on the street near the hotel loading and unloading zone.

A few prizes always add interest and incentive. A subscription to a periodical, some labels, or inexpensive equipment such as a veil, hive tool, or smoker would be most welcome.

R. L. Post
Chairman, Display Committee
North Dakota State University

Empire State Honey Producers' Association
Syracuse, Dec. 15-16

The annual 2-day winter meeting of the Empire State Honey Producers' Association will be held at the Syracuse Hotel, Syracuse, N.Y., on December 15 and 16. Banquet Friday night, Dec. 15th.

Improving beekeeping practices for greater return at lowered expense will be the general theme of the program, plus reports on experiments being conducted towards this goal throughout the U.S.

All beekeepers and friends are cordially invited.

M. C. Trippe, Sec'y

Northeast Kansas Association
Kansas City, Kansas, December 3rd

The Northeast Kansas Association will meet Dec. 3 at the I.O.O.F. Hall, 2107 Silver Ave., Kansas City, Kansas.

A Christmas dinner will be served at 1 o'clock. Business meeting at 2:30. A film will be shown, titled "The Schultz Honey Farms." Everyone is welcome. Plan to attend.

Mrs. Bert M. Parish, Sec'y

Oregon State Convention
Boise, Idaho, Dec. 7-9

The 1961 Convention of the Oregon State Association will be held during the meeting of the Northwest Beekeepers in Boise, Idaho, on December 7, 8, and 9 at the Owhyee Hotel. The Idaho Association has a wonderful program planned for us and we wish to urge all Oregon beekeepers to plan to attend.

Oliver Petty, Sec'y

Virginia State Association
Richmond, Dec. 9

The Virginia State Association will meet in Richmond, Dec. 9th, at the Y.M.C.A., No. 2 West Franklin St., at 10 a.m. All beekeepers are invited.
Henry W. Weatherford, Sec'y

Roger Topping, Chief Inspector for Alberta

Mr. Roger Topping has taken over the position of Chief Apiary Inspector for the Province of Alberta. Mr. Topping succeeds Mr. Alan Frost who after three years of very useful service to the beekeepers of Alberta, has returned to Australia.

Mr. Topping developed his interest in beekeeping on the Isle of Man, coming to Canada in April, 1954. He was previously employed as a technician at the University of Alberta. He has been very active in the local Beekeepers' Association.

Our best wishes go to Mr. Topping in this, his new position. We are confident that he will contribute much to the beekeepers and the industry in Alberta.
Mrs. Clydie A. Bird, Sec'y
Alberta Association

Montana State Association
Billings, Dec. 1-2

The Montana State Association will hold the annual meeting in Billings Dec. 1-2 with headquarters in the Northern Hotel. All beekeepers are urged to attend.
Mrs. O. R. Burdett
Secretary

The Federation

Secretary Joseph O. Moffett
P. O. Box 855, Fort Collins, Colorado

Sometimes it is important to look back and evaluate the accomplishments of an organization in the past. This helps us plan for the future. About ten years ago the main emphasis of the Federation was shifted from publicizing the pollination value of honey bees to increasing the demand for honey.

Price Support. Despite much hard work and expenditure of money, the results to date have been disappointing. The first big push was to obtain price support for honey. While this program has served as a valuable floor for honey and the loan and export features have been helpful, it has not increased the consumer demand for honey to any marked degree. Obviously, more than the price support program is needed if honey prices are to increase with rising production costs.

Check-off-plan. The voluntary check-off-plan has been tried for seven years. Some packers and beekeepers have worked very hard to make this plan successful. At almost every Federation meeting, the beekeepers and packers vow to really make the plan work in the coming year. Yet it has never gotten off the ground. Apparently, something else is needed if the bee industry is really going to promote honey.

Honey queen, home economist booth, honey show. Various other programs to promote honey have been sponsored

by the Federation, often with considerable help from other segments of the industry, such as the honey packers. Some of these are the honey queen program, the honey booth at the American Home Economist's Ass'n Convention, and the National Honey Show.

These programs have obtained considerable publicity for honey and have undoubtedly helped to keep honey from slipping in its competition for the consumer's dollar.

Compulsory funds. For many years the possibility of raising compulsory funds to promote honey has been considered. In 1952 a resolution was passed at the Federation Convention at Dallas urging the Federation to aid state organizations to obtain marketing agreements, taxes on bees, or any other method so that 5c per can or 5c per colony could be collected. The money was to be spent on promoting honey. All such plans should be devised so as not to retard the free movement of honey in the United States. The major portion of such funds was to be pooled for a national campaign to promote honey.

The 1961 convention asked a committee to explore the possibilities of raising mandatory funds for honey promotion and research. Some other agricultural commodities have been very successful in increasing the demand for their product through such programs. California has increased their honey consumption through an aggressive marketing program financed by compulsory funds. Nothing the bee industry has done to date has given the results our industry needs if it is to prosper. Are compulsory funds for honey promotion the way to a better economic future for the bee industry? Many beekeepers feel it offers the greatest hope.

Members needed. More members are needed to help your organization to better serve you. With your help we can continue to grow. JOIN YOUR FELLOW BEEKEEPERS IN YOUR GROWING ORGANIZATION. Ask your neighboring beekeepers to join. Minimum dues are $5.00. Send dues to Joseph A. Moffett, Secretary, P. O. Box 855, Fort Collins, Colorado.

Kansas Honey Queen

Sally Sue Smith, Kansas State Honey Queen, was chosen at the Kansas State Beekeepers meeting at Abilene, Kansas, October 7th. Miss Smith was sponsored by the Northeastern Kansas Beekeepers Association who elected her as their queen previously.

Betty Myers,
1962 Tennessee Queen

Governor Buford Ellington crowns Miss Betty Myers of Harrison, Tennessee, Honey Queen for 1962. Betty is the daughter of Mr. and Mrs. Jas. Myers who are very active members of the Chattanooga Area Beekeepers' Association, one of the strongest in the South. Governor Ellington is a beekeeper and knows the value of bees on his farm. He likes the honey they produce and serves it to his friends who visit the mansion. He is a booster for honey and the beekeeping industry.

L. H. Little, Secretary
Tennessee Association

Michigan's Honey Queen

Michigan's Honey Queen, 18-year-old Judy Hrushka of Boyne Falls, presents a jar of honey to Dick Clark just before the TV and recording star went on stage to headline his Coliseum show at the 112th Michigan State Fair. Miss Hrushka is one of some 50 Queens from all parts of the state who vied for the Miss Michigan State Fair title in competition at the Fairgrounds Tuesday and Wednesday, September 6 and 7.

Dick Frederick
Public Relations

Association Secretaries and Reporters

There are two points to call to your attention when you send in announcements of association meetings or when you make reports of past meetings.

Remember that meetings which are to occur early in the month should be announced two months previously. Otherwise those who receive their Journals beyond the date of the meeting will not be able to attend. Meetings, as an example, for any time before the 15th of November should have been published in the October issue; not in the November issue.

Also, when reports of past meetings are given please make them short. Sometimes reports are sent in two pages long. Less than one page is better. Don't give complete reports; just the most important items. Make everything short and to the point.

Our 1961 American Honey Queen

Now we have a little room to give you some views of our Honey Queen for 1961, Miss Elaine Prather, a hobbyist beekeeper of Woodland Mills, Tennessee. The picture at the lower right shows Elaine being first crowned by Governor Ellington of Tennessee as Queen of that state. In the top picture she poses with her attendants and some of her competitors; left to right, Miss Wisconsin, Miss Pennsylvania, Miss Nebraska, Miss Michigan and Miss Iowa (picture from Henry Spence, Jr., Chairman, Federation Publicity). At lower left, a picture from the Kansas City Star, from R. F. Ferguson of the Northeastern Kansas Association. Elaine is a Junior in college, studying business administration and physical education. She hopes to teach when she graduates. She was selected by the Federation from seventeen contestants from various states.

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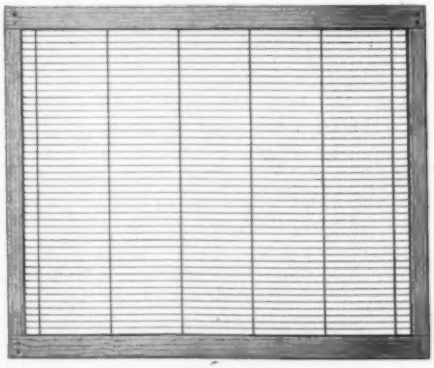

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FOR SALE: 100 colonies good bees, excellent equipment. No disease. Cash. Carold Mains. Red Oak, Iowa.

SEVERAL HUNDRED two story 10-frame hives delivered Nebraska or adjoining states early May or last of April. Write Box D.S., c/o American Bee Journal.

OLD AND out of print books on bees. Send for list. Carl Kalthoff, Country Club Road, Route 2, Box 21, Lexington, Mo.

USED PAPER cartons for sixties. 80 pounds ⅜ steel tape and dispensing wheel with stand. Cheap. Taylor, 402 Wendy Heights, Council Bluffs, Iowa.

INSPECTED queen rearing operation in northern California with locations. Capacity for 1800 4-frame nuc sides, 200 colonies. 1956 1½ T. truck with loader. All necessary equipment including extracting. For sale or lease 28 x 56 warehouse with modern 1-bedroom apartment, excellent deepwell water supply. Box CBA c/o American Bee Journal.

PROPIONIC ANHYDRIDE will be in stock September 1. All new, Food and Drug Approved on August 2 for removing honey from bees. For free information HUBBARD APIARIES, ONSTED, MICHIGAN.

FOR SALE: Domestic Pollen, Royal Jelly. Also Pollen Supplement Dry Mix (You add water and honey). Royal Jelly Enterprises, 1017 Los Carneros Avenue, Napa, California.

FREE CATALOG: Cypress Bee Hives and bee supplies. Save up to 40% on hives that last. Myers Craft Manufacturing Co., Burgaw, North Carolina.

SUPER STRENGTH 100 mg. Royal Jelly capsules in bottles of 100 for $10.00. Prairie View Honey Co. 12303 Twelfth St., Detroit 6, Michigan.

ROYAL JELLY $8.00 ounce, eight ounces $50.00, full pound $90.00. Delivered Air Mail. Phillips Honey Co., P. O. Box 1506, Clearwater, Florida.

HONEY FOR SALE

TWO HUNDRED sixties white clover, one hundred of dark amber. Traphagen, Hunter, New York.

WHITE CLOVER HONEY in sixties. Ralph Gamber, 911 State, Lancaster, Pa.

WE CAN SUPPLY NICE white honey. Immediate delivery. Russell Smalley. Beaver, Iowa.

NEW FLORIDA TWIN PACK. Two three-pound cans of your choice. Orange Blossom, Tupelo, Gallberry, or Palmetto $3.00 postpaid. Phillips Honey Co., P. O. Box 1506, Clearwater, Fla.

HONEY FROM Mexico for sale. Campanilla (aquinaldo) honey, does not crystallize readily, excellent flavor, in 60 lb. tins $8.00 F.O.B. Middlebury. Also individual cut comb honey (2½ oz.) in attractive cartons of 24 combs (unclassified). Delicious honey from the blossoms of orange, coffee and chalahuite. Ideal for gift packages. $18.00 per case of six cartons, F.O.B. Middlebury. Champlain Valley Apiaries, Box 127, Middlebury, Vermont.

CLOVER HONEY in 60 lb. cans. Will deliver truck loads. Dorothy Kline, Fairmont, Nebraska.

HONEY and BEESWAX WANTED

CARLOTS OR trailer loads, bottling grade and bakers honey, drums. Submit samples, offers. KANE IMPORT CORPORATION, 10 E. 40th St., New York 16, N. Y.

WANTED: Clover, goldenrod, and buckwheat honey. Write and send samples. Cloverdale Honey Co., Fredonia, N. Y.

WANTED: White clover honey in 60's preferably drums, mail samples and cash price delivered. Stoller Honey Farms, Inc., Latty, Ohio.

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Mich.

HONEY AND Beeswax wanted. Melford Olson Honey Co., 5201 Douglas Drive, Minneapolis 22, Minnesota.

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STATE OF ILLINOIS
County of Hancock—ss.

Before me, a notary public in and for the state and county aforesaid, personally appeared M. G. Dadant, who, having been duly sworn according to law, deposes and says that he is the business manager of the American Bee Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the name and addresses of the publishers, editors, and business managers are:
Publishers: American Bee Journal, Hamilton, Illinois.
Editors: G. H. Cale, Hamilton, Ill., M. G. Dadant, Hamilton, Ill., R. A. Grout, Hamilton, Ill.
Business Manager: M. G. Dadant, Hamilton, Ill.

2. That the owners are: Dadant & Sons, Inc., Hamilton, Ill.

3. That the known bondholders, mortgagees and other security holders owning or holding one per cent or more of the total amount of bonds, mortgages, or other securities are: None

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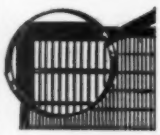

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Crop and Market Report

by M. G. Dadant

FALL CROP RESULTS

In most sections of the country, the weather was favorable for the growth of fall weeds and there was considerable harvesting of honey by the bees. This does not mean that there is an actual surplus crop but that in most cases the bees did gather honey enough to encourage brood rearing and to fill the brood chamber in quite satisfactory condition for winter. However, there were some exceptions. The New England states, and extending down into Maryland, seem to have profited some in a surplus crop way. The little extra surplus in some sections of southwestern Iowa and the big surplus in Montana can hardly, however, be called a "fall crop," although it came late in the summer and could not be designated as the usual fine white alfalfa honey of the Montana-Dakota region. Ontario reports some excess fall extracted honey and a little in Manitoba.

TOTAL CROP

The New England states seem to have averaged better than a year ago. In New York, however, the opposite is the case, being probably 75 per cent of the 1961 crop. New Jersey falls along with New England or even better, having about 140% of usual and Maryland perhaps 150%. The same applies to West Virginia with a smaller percentage of extra over last year in Virginia. Georgia was about the equal of last year, perhaps a little more, with Florida and the balance of the South falling short of 1960, although not a failure.

Central areas do not seem to have done as well as a year ago except that northwestern Missouri and northwestern Iowa, some parts of southwestern Minnesota and extending into southeastern South Dakota seem to have produced a better crop than a year ago. The continued drought in western South Dakota and on into Montana assured those sections of less than a year ago, although Montana did recover very decidedly through their late crops after some belated rain arrived. However, the total would not equal a year ago. North Dakota and northern South Dakota were short, Nebraska proved much better than a year ago, with Kansas perhaps about average, Oklahoma short, Texas in most sections short of a year ago.

The Rocky Mountain area was not any better than a year ago, the Northwest about equal, New Mexico short on account of poison sprays, Arizona and southern California still suffering from the extreme drought which apparently has not yet been compensated by late rains. In fact, if it were not for the irrigated regions, the dryer desert areas would have been a failure on account of complete lack of rain.

On the whole, the writer does not

(Please turn the page)

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believe the crop in the United States was the equal of last year even though the government reports about 6% gain from their initial estimate figures. Of course their final figures are not in as yet.

CONDITION OF BEES

The condition of bees seems to be universally good. We find some exceptions. Dry weather in Georgia has not permitted the bees to get their usual amount of fall fill-up. Some colonies in Illinois are similarly light and California, of course, as mentioned above, is still dry. The western provinces of Canada, Manitoba and Saskatchewan particularly, have not had the rains to bring their bees to best condition. In British Columbia the crop has been shorter than last year, although the bee conditions seem to be quite satisfactory at this time.

MOISTURE AND PLANTS

Similar to condition of bees, is that of moisture and plants where conditions are generally better than average. West Virginia, parts of Virginia, extending down into the Carolinas are quite dry. Georgia reports dryer than can be wished, and the eastern sections of South Dakota and Montana are dry. Many parts of the southern section of the U. S. and the western provinces of Canada are also suffering from the continued drought.

HONEY MARKET

Honey has not been moving quite as well as usual which is understandable from two points of view. The first is that we have not had any persistently cold weather and the second is that packers have not been insistent on buying early as they did a year ago to "boost the market." It is, however, quite remarkable that in most southern and eastern areas prices of bulk honey have not shown any effect of the slowness in western areas. This has been helped by the fact that we have had several reports of instances where prices advanced for small honey containers on the grocers' shelves over a year ago by 1 cent or 2 cents a pound. All in all, however, the market is slow and the tendency by the packers is still "stand-offish" awaiting to see where the situation will "jell."

It is true, however, that in many sections nice white honey has been spoiled by the addition of some amber grades late in the season. This applies particularly to California which has very little pure white honey and even Montana's usually water-white honey is to some extent mixed with the later flow from a variety of sources which were nonetheless well received.

As mentioned above, however, the tendency is "toward a slowness in the market" and from the Mississippi west apparently a drag of 1 cent to 1½ cents per pound where offers are being made on honey or rather where quotations are being made when the beekeeper requests. Some sales are being made at this figure but for the most part beekeepers are not in a hurry to sell honey at anything less than last year's rates and in many instances have been able to move their crop on this basis.

The fact that the Canadian crop is not large, and that the excess crop Ontario previously carried has been pretty well disposed of, makes for an advance rather than a decline in Canadian honey prices and this, of course, to some extent balances in favor of the possibility of honey from our central and western areas becoming more valuable as the season advances. While eventually beekeepers may have to sell at somewhat under last year's prices, we are still optimistic on a gradual stiffening of the market unless there is interference on the part of importations of honey.

As we said previously, east of the Mississippi and south to the coast, there seems to be very little change in prices over a year ago and in some instances some advances.

Wisconsin beekeepers are awaiting recommendations of their marketing committee as to prices. Extracted honey prices have already reached the recommended stage in Minnesota at the Detroit Lakes market conference. We repeat these prices in brief as followe: Retail: 1-pound pack 37-39 cents per pound; 2-pound pack, one jar, 69 cents; 3-pound pack, one jar, 99 cents; 4-pound pack, one jar, $1.15 to $1.19; 5-pound pack, per jar $1.49; 8-oz. pack, one jar 25 cents; 12 ounce plastic, one bottle, 39-43 cents. Other honey packs were recommended.

Honey creamed, in cases of 24, 11 oz. single pack 37 cents, retail section comb, one section 49 to 55 cents.

Sixty pound cans to baker 18 cents per pound, and the bulk extracted figure was again repeated as of last year, 14 cents per pound f.o.b. producer's point. The producer to furnish cans, buyer to take care of the freight.

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Our Mistake, Dr. Munro

A letter from Dr. J. A. Munro, calls attention to a mistake in his article in the September issue on page 342, "From Bolivia to Rome." He mentions his stay in Bolivia where he spent three and a half years in the capital city of La Paz. In the published material we say that the altitude of La Paz is "about 3000 feet." Actually the altitude is between 12,000 and 13,000 feet. The La Paz Airport is 13,404 feet above sea level and is located on a plateau just above the city.

New Zealand Honey Exports

The Australian Bee Journal advises that the New Zealand exports of honey are dropping as consumption at home increases. The 1960 production was some 5,000 tons of which only 380 tons were exported compared to 1,000 tons in 1959. It is estimated that even with a better crop for 1961 it is doubtful if the amount available for export will equal the small amount sent out in 1960. Our compliments, New Zealanders.

Drought Loans for Beekeepers

One of our subscribers asks whether beekeepers are eligible for loans in drought territories like parts of Dakotas, Montana and elsewhere. We immediately posed the question through our representative in Washington.

There seems to be no restrictions on such farm loans in disaster areas. Final determinations would be made by the County Supervisor of the Farmers Home Administration, and the Agricultural Conservation Program and Agricultural Stabilization.

We assume that individual beekeepers might contact their county officers as to the terms for qualification.

Nebraska Bee Laws Revised

A revision of Nebraska bee laws has been announced by C. J. Walstrom, State Entomologist. The requirement that entering honey must have a health certificate has been dropped (as it was never very effective). A fifteen day waiting period is necessary for entering bees on combs in addition to previous health certificates. The State Entomologist must furnish county assessors with lists of beekeepers and colonies in each county.

Penalty for law violations is fixed at $25.00.

Good Winter Reading

ABC and XYZ of Bee Culture

Each year the average beekeeper is confronted with many problems that he cannot answer. Sometimes he guesses right, but when his guess is wrong the results can be expensive. Why work in the dark when an accurate reference book is so inexpensive? This book is the recognized authority in its field. All subjects are arranged alphabetically so you can find the answer to your question as quickly as a word can be found in the dictionary.
$4.50 postpaid, or $6.50 with 1 yr. of Gleanings

Honey Plants Manual by Lovell

This is just the book for those who are interested in the kind of flower their bees are working, its native habitat, and the grade of honey which results from such flowers. All 700 plants are cleverly arranged by color for easy reference.
$ .95 postpaid.

500 Answers to Bee Questions

For many years the editors of Gleanings have been receiving questions from experienced and inexperienced beekeepers. These questions and their answers have all been compiled into one book. Here are a few of the questions: Is it true that propolis-covered rags used for smoker fuel tend to irritate bees? How much honey must a bee consume to produce a pound of wax? How can you prevent honey from granulating?
$ .95 postpaid, or $2.95 with 1 yr. of Gleanings

Starting Right with Bees

A well-illustrated book that gives helpful suggestions to one beginning in beekeeping. It's light and can fit into your pocket when you go to the apiary. Here are just a few of the many subjects covered:—How to install package bees; how to examine and handle bees; how to detect bee diseases; how to bottle and market honey.
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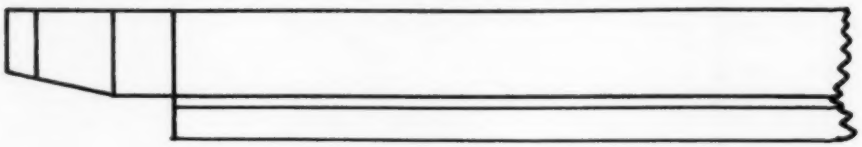

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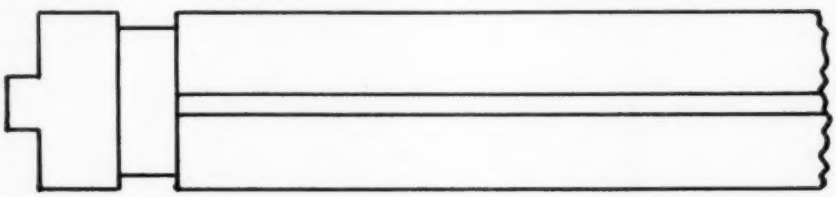

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